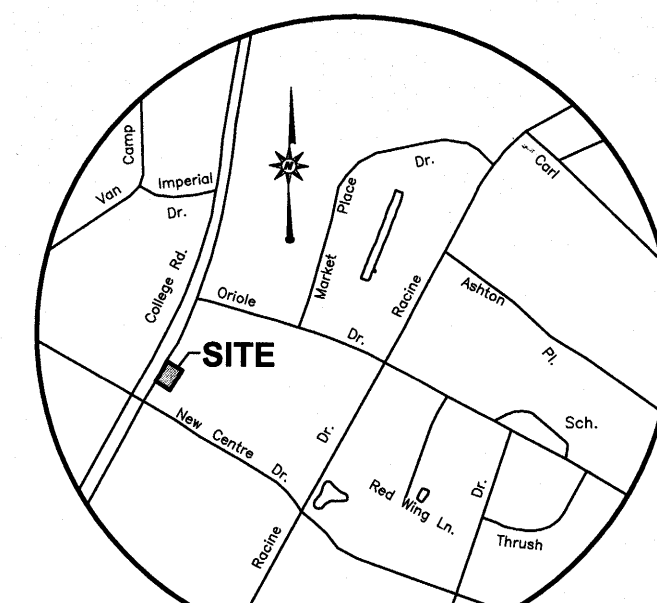


# SHOPS AT COLLEGE ROAD

CITY OF WILMINGTON  
NEW HANOVER COUNTY, NORTH CAROLINA

SUBMITTED TO CITY OF WILMINGTON - OCTOBER 25, 2013



VICINITY MAP  
NOT TO SCALE

## SITE INFORMATION

LOCATION: 309 S. COLLEGE RD.  
WILMINGTON, NC

COUNTY: NEW HANOVER COUNTY

TOWNSHIP: WILMINGTON

TOTAL PROP. ACREAGE: 1.05 AC

PARCEL ID: PORTION OF PARCEL  
R04920-003-005-000  
[SUBDIVISION IN PROCESS]

DEED BOOK/PAGE: 2882/1910

ZONING: RB

LAND CLASS: CURRENT = COM

EXISTING USE: 528 - NEIGHBORHOOD RETAIL

WATERSHED: BRADLEY CREEK

CAMA CLASSIFICATION: URBAN

MUNICIPALITY: CITY OF WILMINGTON

AREA DISTURBED: 1.43 AC

## MINIMUM BUILDING SETBACKS:

FRONT: 25'  
REAR: 15'  
SIDE: 0'  
MAX. BLDG. HT: 35'  
MAX. LOT COVERAGE 40%

## PROPOSED BUILDING SETBACKS:

FRONT (COLLEGE): 97'  
REAR: 68'  
SIDE: 43', 21'  
BLDG. HT: 21'4"  
LOT COVERAGE 18.2%

## BUILDING DATA:

PROPOSED USE: RETAIL/RESTAURANT/FURNITURE STORE

TOTAL BUILDING SIZE: 8,336 SF

CONSTRUCTION TYPE: IIB

## PARKING:

TOTAL REQUIRED PARKING: 1 SPACE/80 SF RESTAURANT MIN.\*  
=> 900SF/80SF = 12 SPACES

1 SPACE/1,000 SF FURNITURE  
=> 3,692SF/1,000SF = 4 SPACES

1 SPACE/400 SF RETAIL  
=> 2,751SF/400SF = 7 SPACES

TOTAL PARKING REQUIRED = 23 SPACES

\*DOES NOT INCLUDE KITCHEN AND BATHROOM AREA

LOADING SPACES REQUIRED 1

HANDICAP SPACES REQUIRED 2

BICYCLE PARKING REQUIRED 5

## PARKING PROVIDED:

REGULAR 9x18' 29

H.C. (REGULAR) 0

H.C. (VAN ACCESSIBLE) 2

LOADING AREA 1

TOTAL: 31

BICYCLE PARKING PROVIDED 6

## BEST BUY PARKING:

TOTAL REQUIRED PARKING: 1 SPACE/400 SF RETAIL  
=> 45,520 SF/ 400 = 114 SPACES

TOTAL EXISTING PARKING: 291 SPACES

REMOVED SPACES: 101 SPACES

TOTAL BEST BUY PARKING: 180 SPACES

## IMPERVIOUS AREA CALCULATIONS

### PROPOSED IMPERVIOUS AREAS:

BUILDING 8,328 SF

TOTAL SITE ACREAGE 45,738 SF  
(1.05 AC)

EXISTING IMPERVIOUS 27,156 SF

PROPOSED IMPERVIOUS AREA 33,948 SF

## UTILITY AGENCIES:

CAPE FEAR  
PUBLIC UTILITY AUTHORITY  
235 GOVERNMENT CENTER DR.  
WILMINGTON, NC 28403  
910-332-6550

NATURAL GAS  
PIEDMONT NATURAL GAS  
4720 PIEDMONT ROW DR.  
CHARLOTTE, NC 28210  
1-800-752-7304

ELECTRIC  
PROGRESS ENERGY BUSINESS  
SERVICES  
PO BOX 1551  
RALEIGH, NC 27602  
866-582-6345

TELEPHONE  
BELL SOUTH  
WILMINGTON, NC  
910-392-8712  
CONTACT: MR. STEVE DAYVAULT

TELEVISION  
TIME WARNER CABLE  
910-763-4638

## GOVERNING AGENCIES:

PLANNING  
CITY OF WILMINGTON  
305 CHESTNUT STREET  
WILMINGTON, NC 28401  
910-341-3260  
CONTACT: KATHRYN THURSTON

ENGINEERING  
CITY OF WILMINGTON  
ENGINEERING DIVISION  
212 OPERATIONS CENTER DRIVE  
WILMINGTON, NC 28412  
910-341-5856  
CONTACT: ROB GORDON

NCDOT-DIV. 3, DIST. 3  
700 DIVISION DR.  
WILMINGTON, NC 28401  
910-251-2655  
CONTACT: MR. ANTHONY LAW, PE  
alaw@ncdot.gov

## INDEX

C-00 COVER SHEET

C-01 EXISTING CONDITIONS

C-02 OVERALL EXISTING CONDITIONS

C-03 DEMOLITION PLAN

C-04 SITE/UTILITY PLAN

C-05 GRADING / DRAINAGE PLAN

C-06 EROSION CONTROL PLAN

C-07 LANDSCAPING PLAN

C-08 LIGHTING PLAN

C-09 TREE PRESERVATION PLAN

D-01 SANITARY SEWER DETAILS 1

D-02 SANITARY SEWER DETAILS 2

D-03 SANITARY SEWER DETAILS 3

D-04 SANITARY SEWER DETAILS 4

D-05 WATER DETAILS 1

D-06 WATER DETAILS 2

D-07 STORM DRAINAGE DETAILS

D-08 SITE DETAILS 1

D-09 SITE DETAILS 2

D-10 LANDSCAPING DETAILS

D-11 EROSION CONTROL DETAILS

SEALED SURVEY

CITY OF  
WILMINGTON  
NORTH CAROLINA

Public Services • Engineering Division  
APPROVED DRAINAGE PLAN

Date: \_\_\_\_\_ Permit # \_\_\_\_\_

Signed: \_\_\_\_\_

Approved Construction Plan  
Name \_\_\_\_\_ Date \_\_\_\_\_

Planning \_\_\_\_\_  
Traffic \_\_\_\_\_  
Fire \_\_\_\_\_

## General Notes:

- Topographical data performed by Michael Underwood & Associates, PA. Contours and boundary information shown hereon are from an actual field survey.
- The Contractor shall notify and cooperate with all utility companies of firms having facilities on or adjacent to the site before disturbing, altering, removing, relocating, adjusting or connecting to said facilities. The Owner shall pay all costs in connection with alteration of or relocation of any existing facilities.
- All excavation is unclassified and shall include all materials encountered.
- All structural fill material shall be free of all sticks, rocks, and clumps of mud.
- Unusable excavated materials and all waste resulting from clearing and grubbing shall be disposed of off-site by the Contractor in an approved solid waste landfill.
- The proposed building will not be sprinkled.
- There is existing underground water, sewer, electrical, natural gas and FIBER OPTIC on-site or within close proximity. Contractors shall dig with extreme caution.
- Concrete Sub shall be responsible for all score joints and expansion joints. Should a question arise about the proposed pattern consult with the Engineer prior to pouring.
- Contractor to furnish all pavement markings as shown.
- Location of underground utilities are approximate and must be field verified. Contact the NC One Call Center at least 48 hours prior to digging @ 1.800.632.4949. Michael Underwood & Associates, PA. has only located the utilities that are above ground at the time of field survey. Underground lines shown hereon are approximate or as reported by various responsible parties. The surveyor does not guarantee that any underground structures such as utilities, tanks and pipes are located hereon.
- All pipe lengths are horizontal distances and are approximate.
- All work shall comply with all applicable codes, regulations, and/or local standards imposed by City of Wilmington.
- All construction and materials shall meet City of Wilmington Utility Specifications and Standards, latest edition. All work within NCDOT right-of-way shall meet the specifications and standards of NCDOT.
- All concrete pipe is to be ASTM C-76, Class III with ram-nak.
- This property is located in zone "X" per FEMA Community Map #: 37017131475, Dated April 3, 2006.
- All lot dimensions shown are approximate. Consult the boundary survey of actual site boundary information.
- Wetlands and ponds are not present on site.
- The Contractor shall be responsible for all work zone traffic control in or adjacent to NCDOT right-of-way. All signs, pavement markings and other traffic control devices shall conform to the Manual on Uniform Traffic Control Devices (MUTCD), latest edition.
- Prior to placing O&B stone base, the Contractor should notify the Project Engineer to inspect and proof roll the subgrade. Any stone placed without prior approval will be the sole responsibility of the Contractor.
- DESIGN/FIELD CONDITIONS quite easily may vary from that represented in the initial soils report and/or topographical report. Isolated areas may show up weak and adverse soils or groundwater conditions may be discovered that were not revealed during the initial soils investigation. Therefore, the Owner/Client is to be aware that Curry Engineering Group, PLLC will not and cannot be held responsible for any failures to either a street or parking lot pavement design unless we can be fully and totally involved in the construction process which may include, but may not necessarily be limited to, testing subgrade and base density, engaging the Design Engineer for the evaluation of the subgrade and for the observation of proof rolling subgrade and base at various steps of construction, opportunity for the Design Engineer to call in a soils Engineer for consultation and advice, etc. - steps which taken altogether with the initial design shown on the plans, constitute the complete design of the road, street or parking area (private or public). The Design Engineer must be given the full latitude and opportunity to complete the design by fully participating in the construction process. Plan design is a small portion of the design and cannot be separated from the construction process if the Owner's/Client's desire is to have the Design Engineer stand behind the completed designed Project.
- All utility services, (power, telephone, cable, etc.) are proposed to be underground. Do not seed or mulch disturbed areas until all underground utilities have been installed.
- Property is to be served by Cape Fear Public Utility Authority (Typ. 44, 46, 68, 69, 70, 71).
- The building setback lines shown on this plot are for the Engineer's use in establishing minimum lot frontages at the setback line and for reserving sufficient building area. Building Contractors are to verify lot line setbacks before setting forms or digging footings.
- Regulatory signs, stop signs and street name signs shall be manufactured from high intensity reflective materials.
- All excess topsoil and unclassified excavation is to be hauled off-site, unless otherwise directed by the Owner.
- All site construction must be inspected by The Project Engineer at the following stages:
  - Completion of grading subgrade prior to placing Stone Base.
  - Completion of Stone placement prior to paving.
  - Final inspection when all work is complete.
- The Surveyor did not visibly see any cemeteries in any open areas unless otherwise noted.
- This property does not depict encumbrances that are found during a thorough title search.
- All HVAC units for the proposed building will be screened from public right of way.
- All curb and gutter to be 24" standard curb and gutter. All curb and gutter within NCDOT or R/W shall be 30" standard.
- All curb and gutter and sidewalk concrete is to be minimum 3,000 psi at 28 days, air entrained.
- All dimensions are to face of curb unless indicated otherwise.
- Handicap ramps are to meet "ADA Accessibility Guidelines for Buildings and Facilities" as detailed in the Federal Register, Volume 56, Number 144 dated July 26, 1991, rules and regulations activated January 26, 1992. For additional information, refer to the NC State Building Code Volume 1-C, "Making Buildings and Facilities Accessible to the Useable by the Physically Handicapped", 1991 edition. All street returns to have H.C. Ramps.
- Contractor SHALL NOT POUR any concrete before forms are inspected by the Project Engineer and/or Owner. Any concrete that has not been approved by the Engineer and/or Owner will be the responsibility of the Contractor.
- All areas not covered by building or parking shall be covered with 4" minimum of topsoil, free of root matter and rocks and grassed.
- Contractor shall saw-cut to provide smooth transitions where existing asphalt and/or curb and gutter is to be removed.
- The Contractor shall provide all the material and appurtenances necessary for the complete installation of the utilities. All pipe and fittings shall be inspected prior to being covered.

- All handicap spaces are to receive a handicap sign and handicap symbol painted on the asphalt. Note stalls to receive van accessible signage.
- The Contractor shall refer to the architectural plans for exact locations and dimensions of precise building dimensions and exact utility entrance points.
- Information concerning underground utilities was obtained from available records and field conditions when possible, but the Contractor must determine the exact location and elevation of all existing utilities by digging test pits by hand at all utility crossings well in advance of trenching. If the clearances are less than specified on the plans or 12 inches, which ever is less, contact the Project Engineer prior to proceeding with construction.
- The Contractor shall include in his contract price the removal and disposal of any excess topsoil he determines is not required to perform the final grading and landscaping operation.
- The Contractor is responsible for the design and implementation of all required/necessary sheeting, shoring, and special excavation measures required on the Project to meet OSHA, Federal, State and Local regulations pursuant to the installation of the work indicated on the drawings. PHD@COLLEGE LLC, City of Wilmington & Curry Engineering Group accept no responsibility for the design to install said items.
- The Contractor shall include in the contract price daily record keeping of the as-built condition of all of the underground utilities, construction stakeout associated with the Project.
- All water line and sewer line installation shall conform to the standards and details of the State of North Carolina Department of Health Construction Permit and Cape Fear Public Utility Authority.
- The Construction Improvement Permit must be kept on the work site and shown upon request.
- The Contractor shall include in the contract price all material and labor associated with the testing of the water and sewer lines required by the State of North Carolina Department of Health & Cape Fear Public Utility Authority.
- The Contractor shall include in the contract price any de-watering necessary to construct the Project as shown on the plans.
- Natural gas is available. See Piedmont Natural Gas contact on this sheet for additional information.
- TESTING BY Contractor: Contractor shall employ at his expense an outside independent Soil Testing Service (approved by the Architect) to perform soil testing and inspection service for quality control testing during earthwork operations. Copies of results of tests shall be submitted by the Testing Service directly to the Contractor, the Architect, and the Structural Engineer. --The Testing Service will classify proposed on-site and borrow soils to verify that soils comply with specified requirements and to perform required field and laboratory testing. (Minimum required soil bearing capacity is noted on the structural drawings). --In paved and building slab areas, the Testing Service shall make at least one field density test for each 2000 square feet of fill in each compacted fill layer. If a test should fail to meet required density, the Contractor shall re-compact that layer. The Soil Testing Service shall perform additional tests at the Contractor's expense to show that the failed layer has reached the required compaction. --In foundation wall areas, the Testing Service shall make at least one field density test for each 100 feet or less of wall length of fill in each compacted fill layer, with no less than two tests along a wall face. If a test should fail to meet required density, the Contractor shall re-compact that layer. The Soil Testing Service shall perform additional tests at the Contractor's expense to show that the failed layer has reached the required compaction.
- COMPACTATION: Compact each layer of backfill and fill soil materials and the top 12" of subgrade in cut areas to 98% of maximum density as determined by ASTM D698 for structures, slabs, and pavements and 90% of maximum density for lawns or unpaved areas.
- The Building Contractor and the site work Contractor are to coordinate the installation of drainage pipes around the building structure.
- Any relocation of existing utilities will be at the cost of the Developer/Owner. The City will not accept responsibility for damages to curb and gutter or street improvements installed prior to underground services, nor will the City absorb the cost for borings to install underground service, pavement patching or damage to landscaping. These will be the responsibility of the Developer/Owner.
- Fire department vehicular access to all structures under construction shall be provided at all times. In areas where ground surfaces are soft or likely to become soft, hard all weather surface roads shall be provided and maintained.
- Address Numbers, must be posted on the front of the structure nearest to the main entrance in a position to be plainly legible, visible, and unobstructed from the street or road fronting the property.
- Disturbed area is less than 1 acre. Based on conversations with Beth Wetherill at New Hanover County Engineering, a formal Sedimentation and Erosion Control Plan is not required. However, certain erosion control measures will still be implemented on this project. Refer to the Erosion Control Plan for additional information.
- All construction shall be in accordance with all City of Wilmington and NCDENR Standards and Specifications.
- Maintain minimum 3' cover for all water pipe.
- Contractor shall maintain an all weather access for emergency vehicles at times during construction.
- Contact traffic engineering (910-341-7888) 48 hours prior to any excavation.
- Prior to any clearing, grading or construction activity, tree protection fencing will be installed around protected trees or groves of trees and no construction workers, tools, materials, or vehicles are permitted within the tree protection fencing.
- All pavement markings in public rights-of-way and for driveways are to be thermoplastic and meet City and/or NCDOT standards.
- It shall be the responsibility of the subdivider to erect official street name signs at all intersections associated with the subdivision in accordance with the Technical Standards and Specifications Manual. The subdivider may acquire and erect official street name signs or may choose to contract with the city to install the street signs and the subdivider shall pay the cost of such installation. Contact Traffic Engineering at 910-341-7888 to discuss installation of traffic and street name signs. Proposed street names must be approved prior to installation of street name signs.
- Traffic control devices (including signs and pavement markings) in areas open to public traffic are to meet MUTCD (Manual on Uniform Traffic Control Devices) standards.
- Contact with Traffic Engineering at 910-341-7888 to ensure that all traffic signal facilities and equipment are shown on the plan. Add a note to call Traffic Engineering at 910-341-7888 forty-eight hours prior to any excavation in the right of way.
- Any broken or missing sidewalk panels, driveway panels, and curbing will be replaced.
- Contact Karen Dixon at 910-341-7888 to discuss street lighting options.
- Project shall comply with Cape Fear Public Utility Authority Cross Connection Control requirements. Water meter(s) cannot be released until all requirements are met and the State has given their Final Approval. Call 910-343-3910 for information.
- If the Contractor desires Cape Fear Public Utility Authority water for construction he shall apply in advance for this service and must provide a reduced pressure zone (RPZ) backflow prevention device on the Developer's side of the water meter box.
- Any irrigation system supplied by Cape Fear Public Utility Authority water shall comply with the Cape Fear Public Utility Authority Cross Connection Control regulations. Call 910-343-3910 for information.
- Any backflow prevention devices required by the Cape Fear Public Utility Authority will need to be on the list of approved devices by USFCCCHH or ASSE.

## Owner:

PHD @ COLLEGE, LLC  
3930 Max Pl.  
Boynton Beach, FL 33436  
919.610.0556 (v)  
email: rob@phdevelopers.com  
Contact: Rob Hicks

## Civil Engineering:

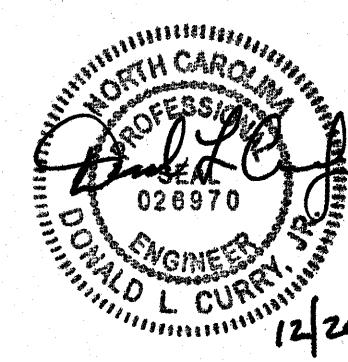
The Curry Engineering Group, PLLC  
1415 W NC Hwy 54,  
Fuquay-Varina, NC 27526  
919.552.0849 (v)  
919.552.2043 (f)  
email: mat@curryeng.com  
Contact: Mat Trowbridge, EI

## Architect:

Finley Design, PA  
1415 W NC Hwy 54,  
Suite 206 Durham, NC 27707  
919.493.8200 (v)  
email: kerry@finleydesignarch.com  
Contact: Kerry Gray Finley, AIA

## Surveyor:

Michael Underwood and Associates, PA  
102 Cinema Drive, Suite A  
Wilmington, NC 28403  
910.815.0650 (v)  
e-mail: mua@bizec.rr.com  
Contact: Michael Underwood, PLS



NOT FOR CONSTRUCTION

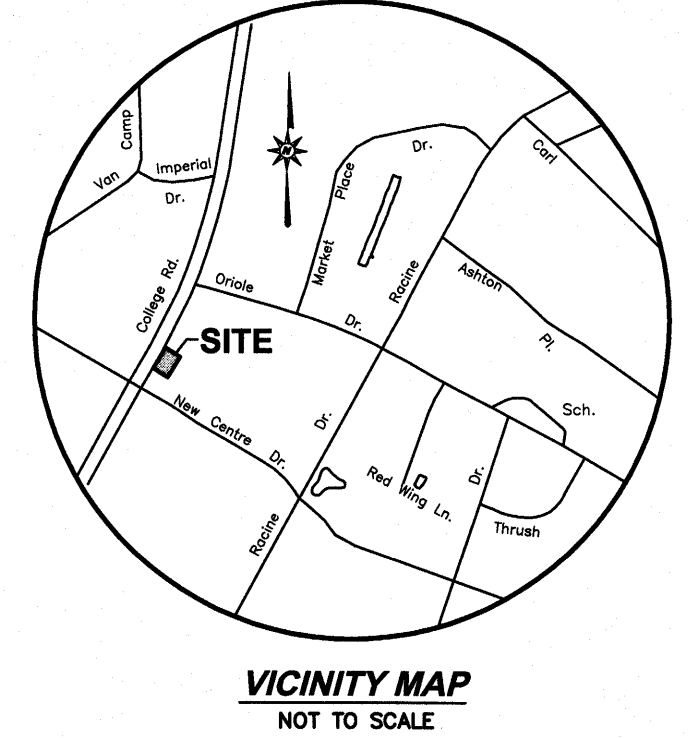
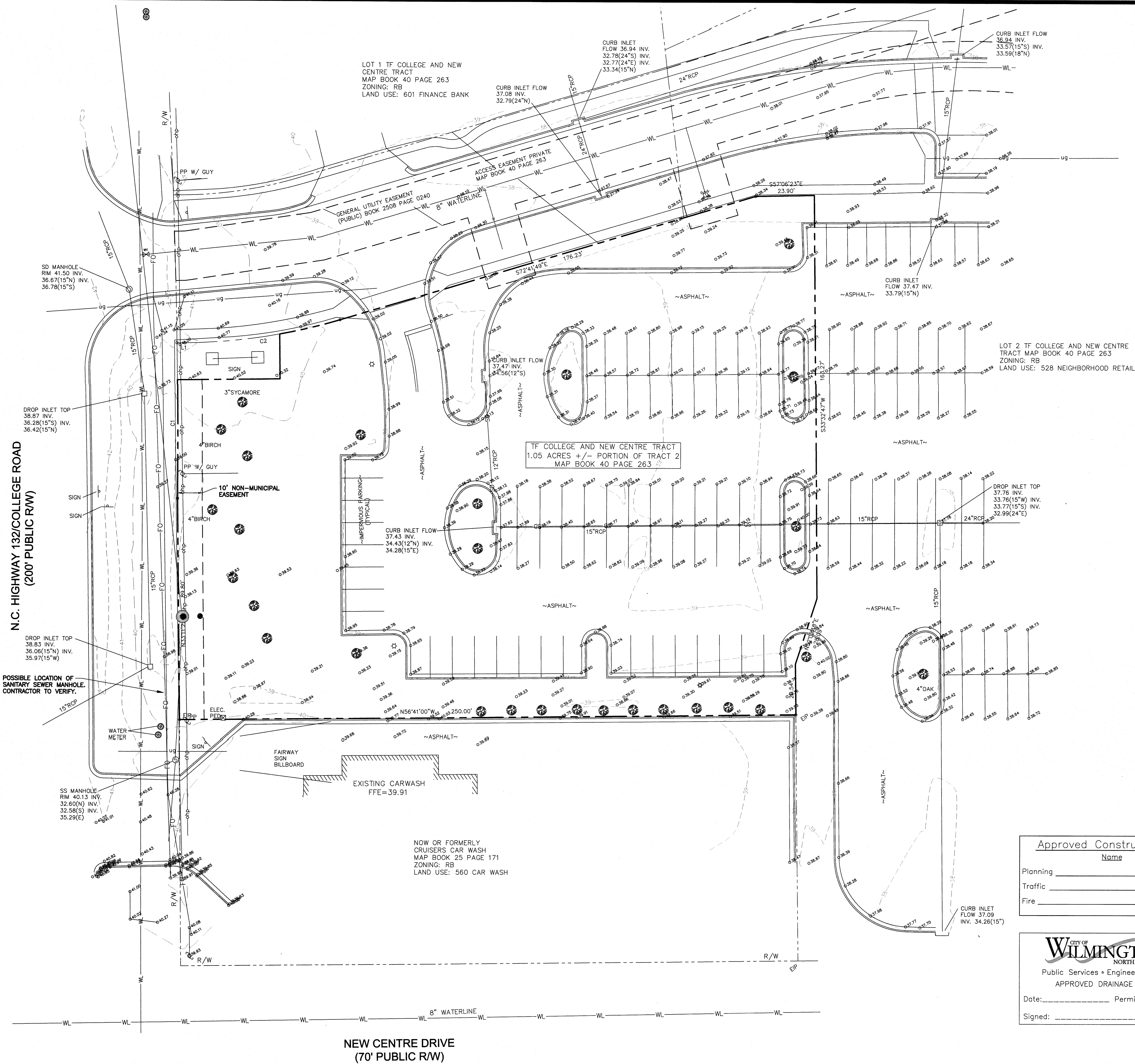
SHOPS AT COLLEGE RD. - WILMINGTON, NC

COVER SHEET

The Curry Engineering  
Group, PLLC

C-00





**LEGEND**

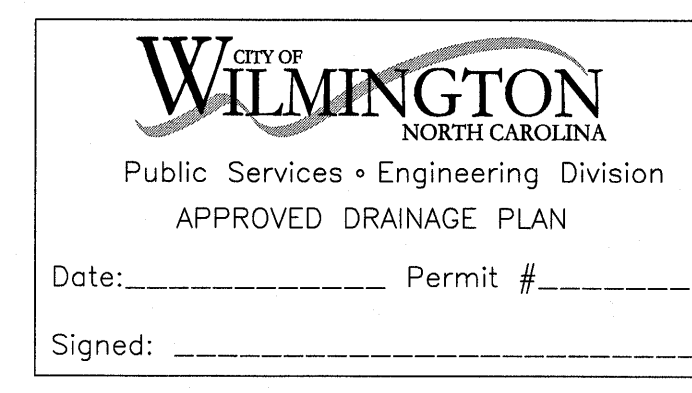
|  |                              |
|--|------------------------------|
|  | LIGHT POLE                   |
|  | UTILITY POLE                 |
|  | CURB AND GUTTER              |
|  | STORM DRAIN MANHOLE          |
|  | SANITARY SEWER MANHOLE       |
|  | FIRE HYDRANT                 |
|  | WATER VALVE                  |
|  | SEWER LINE                   |
|  | WATER LINE                   |
|  | FENCE                        |
|  | UNDERGROUND UTILITY ELECTRIC |
|  | STORM DRAINAGE               |
|  | CONCRETE PAVEMENT            |
|  | EXISTING IRON PIPE           |
|  | IRON PIPE SET                |
|  | POWER POLE                   |
|  | TELEPHONE POLE               |
|  | CLEANOUT                     |
|  | OVERHEAD ELECTRIC            |
|  | OVERHEAD TELEPHONE           |

**Surveyor:**  
**Michael Underwood and Associates, PA**  
102 Cinema Drive, Suite A  
Wilmington, NC 28403  
  
910.815.0650 (v)  
910.815.0393 (f)  
email: mua@bizec.rr.com  
Contact: Michael Underwood

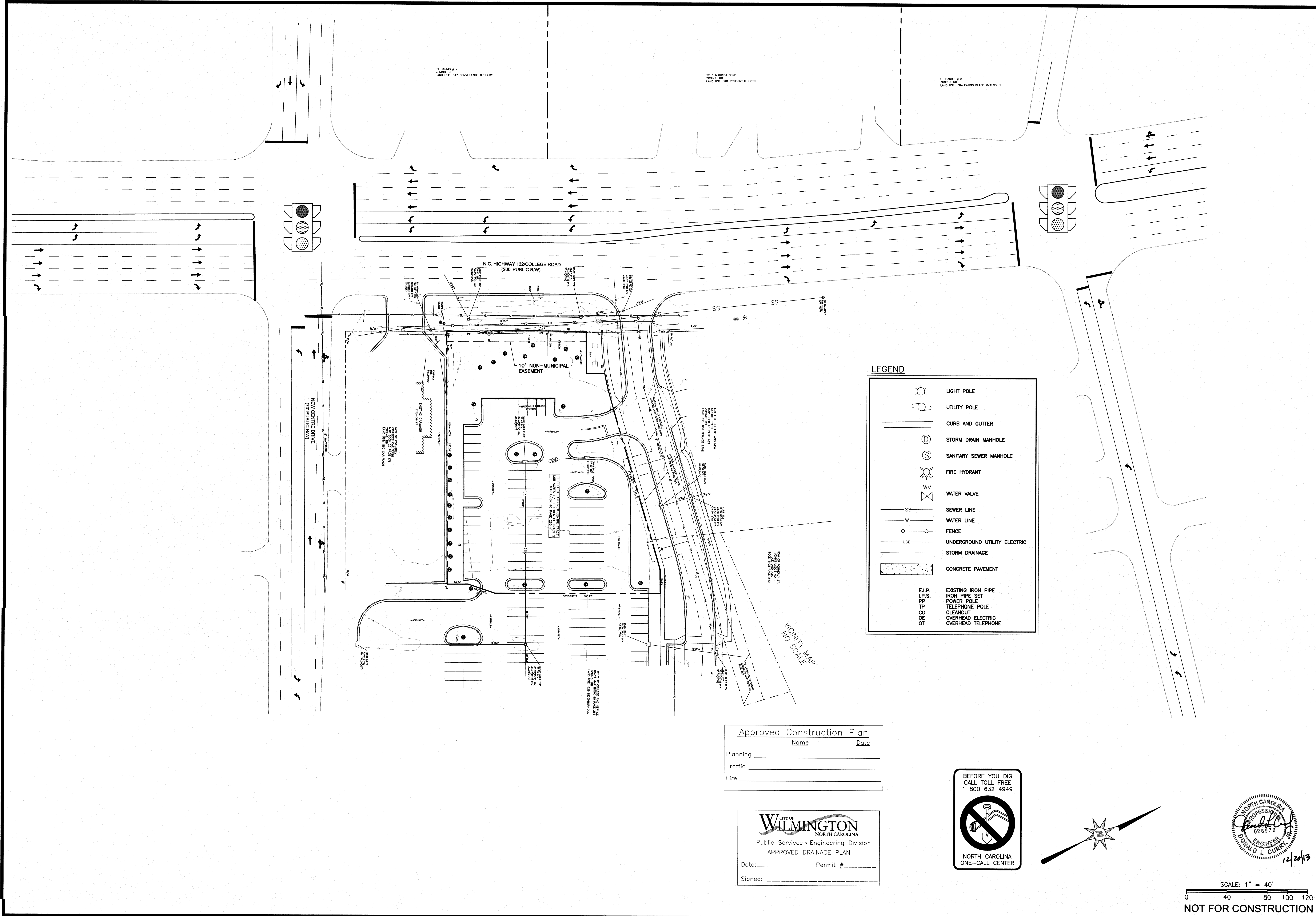
**Approved Construction Plan**

|          |      |
|----------|------|
| Name     | Date |
| Planning |      |
| Traffic  |      |
| Fire     |      |

Date: \_\_\_\_\_ Permit # \_\_\_\_\_  
Signed: \_\_\_\_\_



SCALE: 1" = 20'  
0 20 40 50 60  
NOT FOR CONSTRUCTION



**SHOPS AT COLLEGE RD. - WILMINGTON, NC**

**OVERALL EXISTING CONDITIONS**

PO BOX 2018 Y AVE  
FLOUAY-VARINA, NC  
27526  
PHONE: (919) 552-0849  
MOBILE: (919) 888-9857  
NC LIC. NO. P-4799

**The Curry Engineering Group, PLLC**  
www.curryeng.com

REVISIONS  
1 12/29/13 CITY OF WILMINGTON COMMENTS #1

DATE: OCTOBER, 2013  
FILE NO. 2013 - 007

HORIZ. SCALE: 1" = 40'  
VERT. SCALE: 1" = 40'

ORIG. SHEET SIZE: 24" x 36"

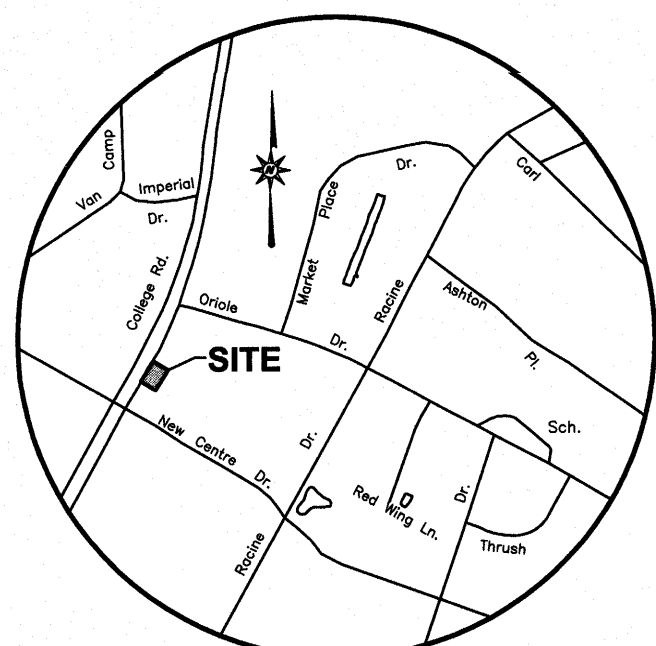
**C-02**



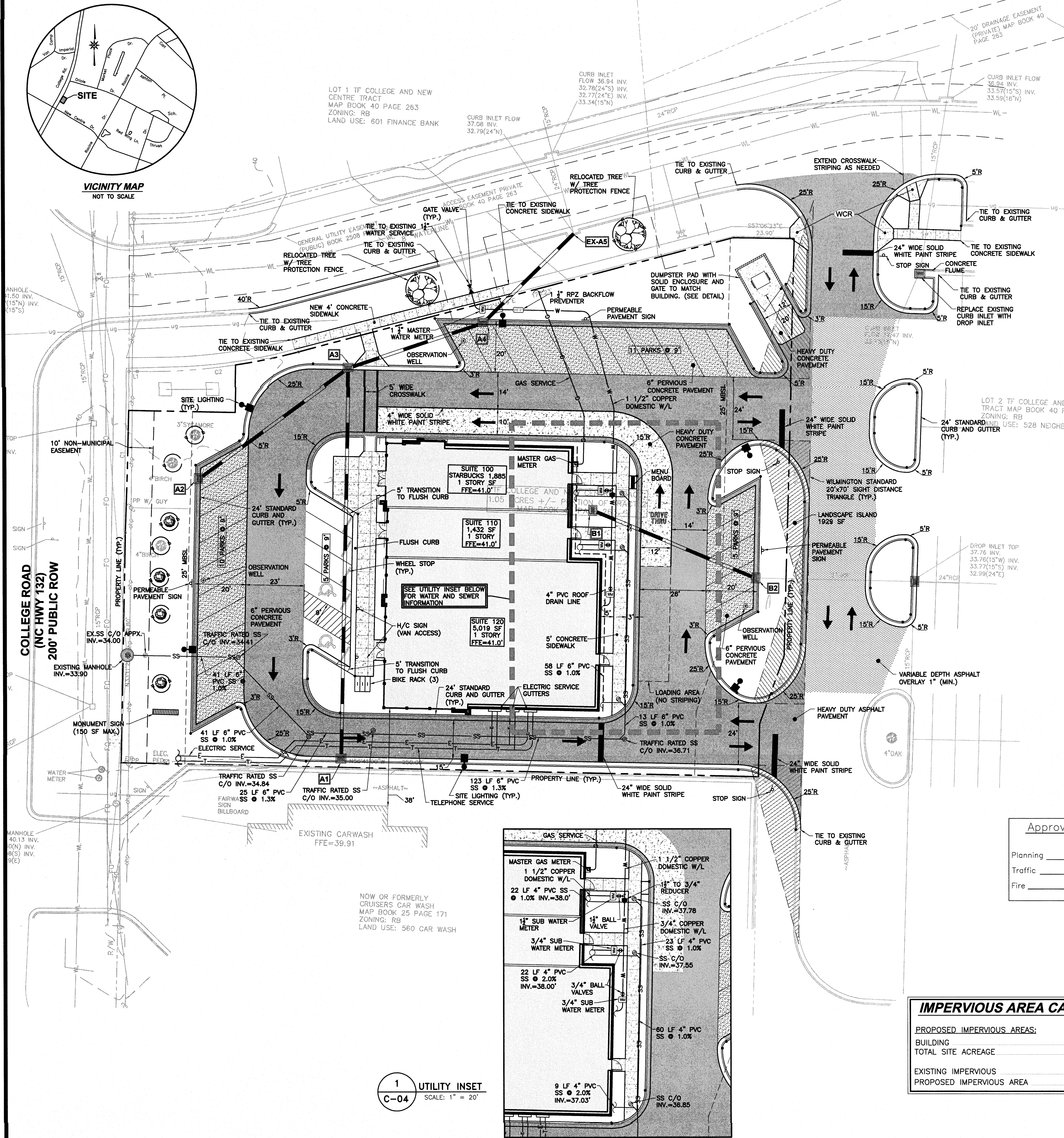


1. ANY ITEM THAT MAY BE ENCOUNTERED DURING BUILDING DEMOLITION THAT MAY BE OF INTEREST OR VALUE TO THE OWNER SHALL REMAIN THE OWNER'S PROPERTY. COORDINATE PROCEDURE FOR REMOVAL AND SALVAGE WITH OWNER.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING PRE-DEMOLITION PHOTOGRAPHS AND/OR VIDEOAPE SHOWING EXISTING CONDITIONS OF ADJOINING CONSTRUCTION AND SITE IMPROVEMENTS PRIOR TO ANY DEMOLITION WORK.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH COVERED EPA REGULATIONS AND HAULING AND DISPOSAL REGULATIONS OF LOCAL JURISDICTION, INCLUDING OBTAINING ALL REQUIRED PERMITS.
4. CONTRACTOR SHALL IMMEDIATELY NOTIFY OWNER IN THE EVENT THAT UN-ANTICIPATED HAZARDOUS MATERIALS ARE ENCOUNTERED. CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS AND REGULATIONS REGARDING THE HANDLING AND DISPOSAL OF HAZARDOUS MATERIALS.
5. CONTRACTOR RESPONSIBLE FOR LOCATING, IDENTIFYING, DISCONNECTING, AND SEALING OR CAPPING UTILITIES SERVING BUILDINGS AND STRUCTURES TO BE DEMOLISHED.
6. UNLESS OTHERWISE NOTED ON DRAWINGS, DEMOLITION SHALL INCLUDE REMOVAL OF EXISTING OBJECTS OR IMPROVEMENTS (WITH THE EXCEPTION OF TREES) THAT WOULD INTERFERE WITH PROGRESS OR COMPLETION OF PROPOSED WORK.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR EROSION CONTROL DURING DEMOLITION.
8. CONTRACTOR SHALL NOTIFY OWNER AT LEAST 48 HOURS PRIOR TO COMMENCEMENT OF DEMOLITION ACTIVITIES.
9. CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTION TO ENSURE THAT UTILITY SERVICES OF ADJOINING PROPERTIES ARE NOT DISTURBED DURING SITE DEMOLITION.
10. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL OFFSITE IMPROVEMENTS DURING DEMOLITION AND COORDINATING RELOCATION OF ANY UTILITY SERVICES DISRUPTED BY DEMOLITION ACTIVITIES.
11. PAVEMENT REMOVAL INCLUDES THE REMOVAL OF ANY ASSOCIATED BASE COURSE AND CURBING.
12. CONTRACTOR SHALL FIELD VERIFY ALL UTILITIES BEFORE COMMENCING DEMOLITION ACTIVITIES.
13. CONTRACTOR SHALL IMMEDIATELY NOTIFY ENGINEER SHOULD ANY DISCREPANCIES OR CONFLICTS ARISE.
14. REMOVE ALL EXISTING STRUCTURES INCLUDING FOUNDATIONS.
15. REMOVE ALL ITEMS SHOWN ON EXISTING CONDITIONS PLAN AS NEEDED FOR INSTALLATION OF NEW WORK.
16. PRIOR TO ANY CLEARING, GRADING OR CONSTRUCTION ACTIVITY, RELOCATE TREES AS SHOWN AND INSTALL TREE PROTECTION FENCING AROUND PROTECTED TREES. NO CONSTRUCTION WORKERS, TOOLS, MATERIALS, OR VEHICLES ARE PERMITTED WITHIN THE TREE PROTECTION FENCING.
17. CONTRACTOR SHOULD SEE LANDSCAPE PLAN FOR FINAL LOCATIONS OF RELOCATED TREES.



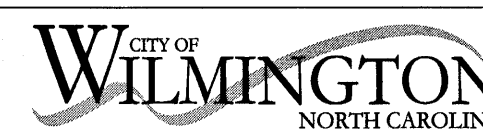


VICINITY MAP  
NOT TO SCALE



NOTES:

1. ALL PROPOSED SIGNAGE SHALL COMPLY WITH CITY OF WILMINGTON SIGN ORDINANCE.
2. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND PAYING FOR ANY PERMITS AND/OR CONNECTION FEES REQUIRED TO CARRY OUT THE WORK.
3. ALL DIMENSIONS ARE TO THE EDGE OF PAVEMENT, FACE OF CURB, FACE OF BUILDING, OR PROPERTY LINE UNLESS SHOWN OTHERWISE.
4. ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH CITY OF WILMINGTON, NEW HANOVER COUNTY, AND CAPE FEAR PUBLIC UTILITY AUTHORITY AS APPLICABLE.
5. THIS SITE IS SERVED BY CAPE FEAR PUBLIC UTILITY AUTHORITY.
6. THERE SHALL BE NO TAPS, PIPING BRANCHES, UNAPPROVED BYPASS PIPING, HYDRANTS, FDC POINTS, OR OTHER WATER-USING APPURTENANCES CONNECTED TO THE SUPPLY LINE BETWEEN THE WATER METER AND ITS CITY OF WILMINGTON REQUIRED BACKFLOW PREVENTERS.
7. REDUCED PRESSURE PRINCIPLE-DETECTOR ASSEMBLIES TO BE INSTALLED ABOVE GROUND WITH INSULATED ENCLOSURE PER CITY REQUIREMENTS. THE FOLLOWING MODEL NUMBERS SHALL BE PROVIDED: - 3/4" AND 1.5" BACKFLOW-WAITS MODEL 909M1QT
8. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL GRADES PRIOR TO THE START OF CONSTRUCTION.
9. MAINTAIN MINIMUM 3' COVER FOR ALL WATER PIPE.
10. ALL SANITARY SEWER CLEANOUTS IN PAVEMENT AREAS SHALL BE TRAFFIC RATED.
11. ALL P.V.M.T. MARKINGS SHALL BE THERMOPLASTIC WITH THE EXCEPTION OF PARKING STALLS.
12. CROWDWAYS SHALL BE 8" WIDE SOLID WHITE THERMOPLASTIC.
13. STOP BARS SHALL 4' BEHIND THE CROWDWAY, AND 24" WIDE, SOLID WHITE THERMOPLASTIC.
14. MAX. SIDEWALK CROSS-SLOPE IS 2%.
15. FINAL SURFACE COARSE SHALL OVERLAP SAWCUT JOINT AND INTERFACE OF ASPHALT OVERLAY AND NEW/EXISTING ASPHALT PAVEMENT. (2' MIN.)
16. SCARIFY EXISTING ASPHALT AND APPLY TACK COAT PRIOR TO INSTALLING OVERLAY.
17. TACTILE WARNING MATS ARE TO BE INSTALLED ON ALL WHEELCHAIR RAMPS.
18. ALL TRAFFIC CONTROL SIGNS AND MARKINGS OFF THE RIGHT-OF-WAY ARE TO BE MAINTAINED BY THE PROPERTY OWNER IN ACCORDANCE WITH MUTCD STANDARDS.
19. ALL PARKING STALL MARKINGS AND LANE ARROWS WITHIN THE PARKING AREAS SHALL BE WHITE.
20. INSTALL REFLECTORS PER CITY & MCDOT STANDARDS. TRAFFIC ENGINEERING MUST APPROVE OF PAVEMENT MARKING PRIOR TO ACTUAL STRIPING.
21. PERMEABLE PAVEMENT SHALL NOT BE INSTALLED UNTIL ADJACENT AREAS HAVE BEEN STABILIZED.
22. A UTILITY CUT PERMIT IS REQUIRED AS NEEDED FOR EACH OPEN CUT OF A CITY STREET. CONTACT 910-341-5888 FOR ADDITIONAL DETAILS.
23. CONTACT TRAFFIC ENGINEERING AT 910-341-7888 48 HOURS PRIOR TO ANY EXCAVATION IN THE RIGHT OF WAY.



Public Services • Engineering Division  
APPROVED DRAINAGE PLAN  
Date: \_\_\_\_\_ Permit # \_\_\_\_\_  
Signed: \_\_\_\_\_

FOR CLARITY PURPOSES  
INDIVIDUAL CHANGES WERE NOT  
CLOUDED.

Approved Construction Plan

|          |      |
|----------|------|
| Name     | Date |
| Planning |      |
| Traffic  |      |
| Fire     |      |

IMPERVIOUS AREA CALCULATIONS

|                            |                     |
|----------------------------|---------------------|
| PROPOSED IMPERVIOUS AREAS: |                     |
| BUILDING                   | 8,328 SF            |
| TOTAL SITE ACREAGE         | 45,738 SF (1.05 AC) |
| EXISTING IMPERVIOUS        | 27,156 SF           |
| PROPOSED IMPERVIOUS AREA   | 33,948 SF           |

SITE INFORMATION

LOCATION: 309 S. COLLEGE RD.  
WILMINGTON, NC  
COUNTY: NEW HANOVER COUNTY  
TOWNSHIP: WILMINGTON  
TOTAL PROP. ACREAGE: 1.05 AC  
PARCEL ID: PORTION OF PARCEL  
R04920-003-005-000  
[SUBDIVISION IN PROCESS]  
DEED BOOK/PAGE: 2882/1910  
ZONING: RB  
LAND CLASS: CURRENT = COM  
EXISTING USE: 528 - NEIGHBORHOOD RETAIL  
WATERSHED: BRADLEY CREEK  
CAMA CLASSIFICATION: URBAN  
MUNICIPALITY: CITY OF WILMINGTON  
AREA DISTURBED: 1.43 AC

MINIMUM BUILDING SETBACKS:

FRONT: 25'  
REAR: 15'  
SIDE: 5'  
MAX. BLDG. HT: 35'  
MAX. LOT COVERAGE: 40%  
PROPOSED BUILDING SETBACKS:  
FRONT (COLLEGE): 97'  
REAR: 68'  
SIDE: 43', 21'  
BLDG. HT: 21'4"  
LOT COVERAGE: 18.2%

BUILDING DATA:

PROPOSED USE: RETAIL/RESTAURANT/FURNITURE STORE  
TOTAL BUILDING SIZE: 8,336 SF  
CONSTRUCTION TYPE: IIB

PARKING:

TOTAL REQUIRED PARKING: 1 SPACE/80 SF RESTAURANT MIN.\*  
=> 900SF/80SF = 12 SPACES  
1 SPACE/1,000 SF FURNITURE  
=> 3,692SF/1,000SF = 4 SPACES  
1 SPACE/400 SF RETAIL  
=> 2,751SF/400SF = 7 SPACES  
TOTAL REQUIRED PARKING = 23 SPACES

\*DOES NOT INCLUDE KITCHEN AND BATHROOM AREA

LOADING SPACES REQUIRED 1  
HANDICAP SPACES REQUIRED 2  
BICYCLE PARKING REQUIRED 5

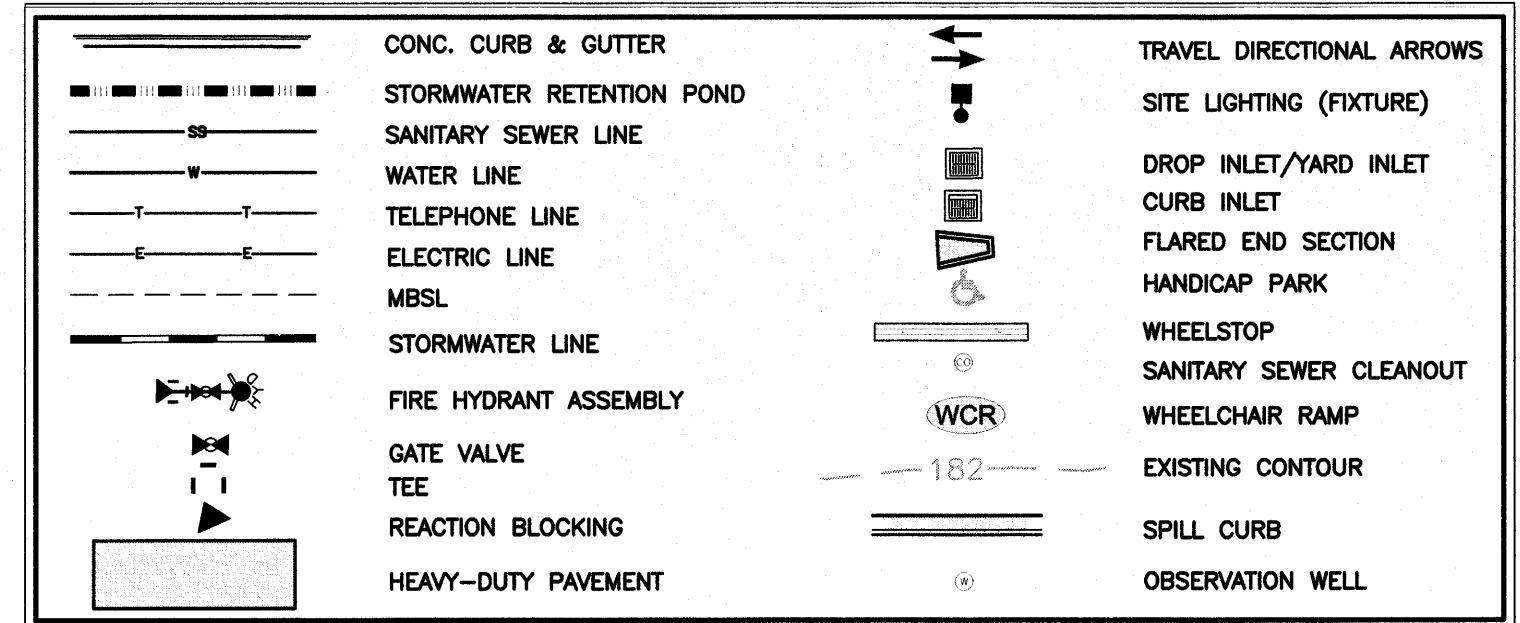
PARKING PROVIDED:

REGULAR 9x18' 29  
H.C. (REGULAR) 0  
H.C. (VAN ACCESSIBLE) 2  
LOADING AREA 1  
TOTAL: 31  
BICYCLE PARKING PROVIDED 6

BEST BUY PARKING:

TOTAL REQUIRED PARKING: 1 SPACE/400 SF RETAIL  
=> 45,520 SF/ 400 = 114 SPACES  
TOTAL EXISTING PARKING: 291 SPACES  
REMOVED SPACES: 101 SPACES  
TOTAL BEST BUY PARKING: 180 SPACES

SITE / UTILITY LEGEND



SCALE: 1" = 20'

NOT FOR CONSTRUCTION

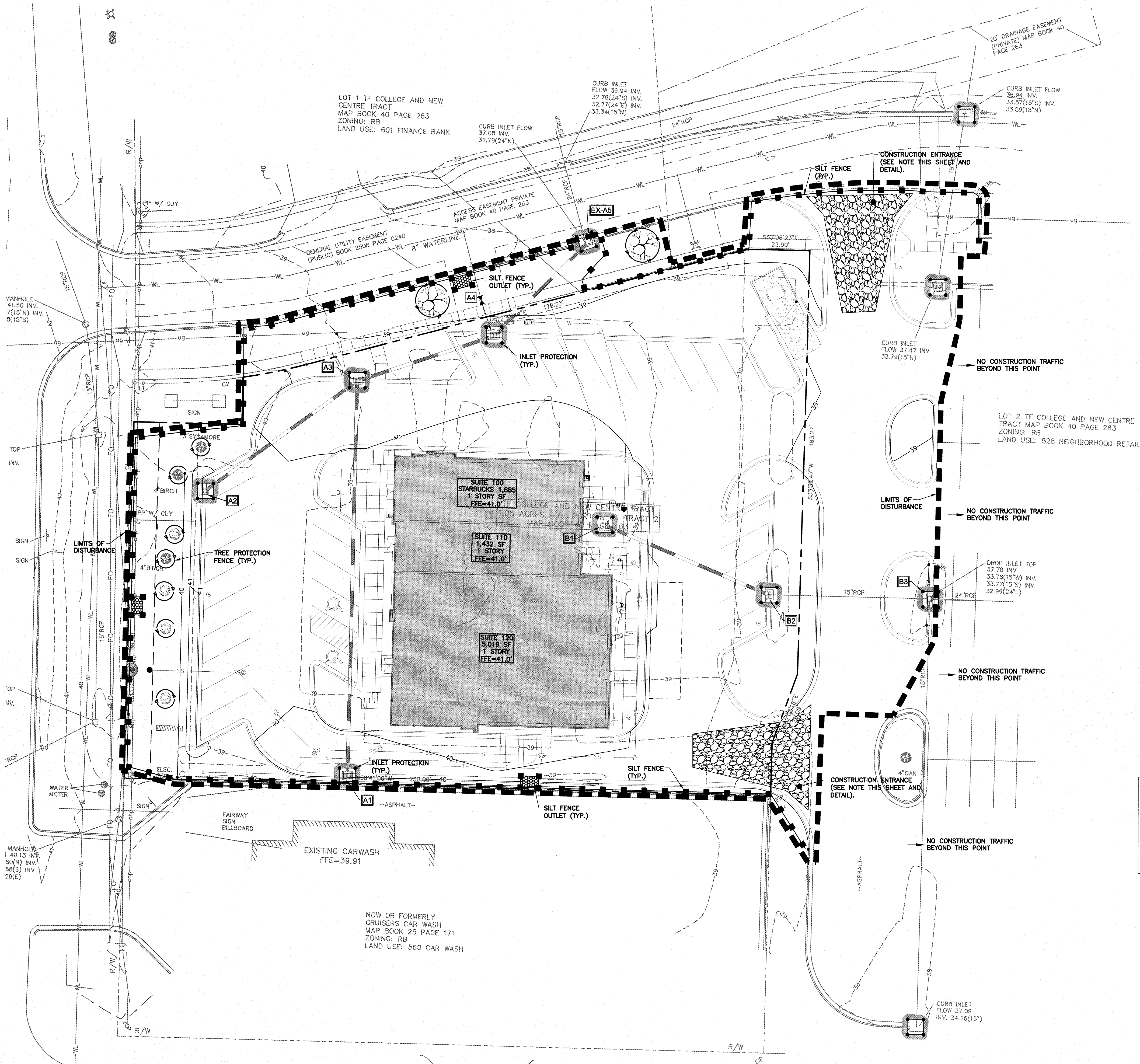
SHOPS AT COLLEGE RD. - WILMINGTON, NC  
SITE / UTILITY PLAN







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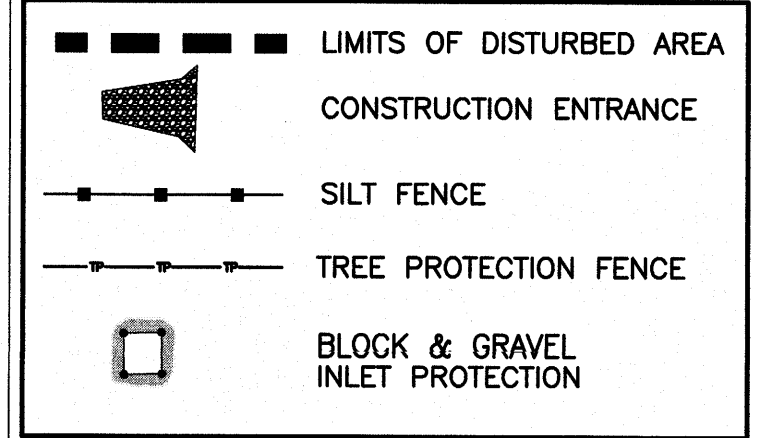
**MAINTENANCE PLAN**

1. ALL EROSION AND SEDIMENT CONTROL MEASURES WILL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY RUNOFF-PRODUCING RAINFALL, BUT IN NO CASE, LESS THAN ONCE EVERY WEEK AND WITHIN 24 HOURS OF EVERY HALF INCH RAINFALL.
2. ALL POINTS OF EGRESS WILL HAVE CONSTRUCTION ENTRANCES THAT WILL BE PERIODICALLY TOP-DRESSED WITH AN ADDITIONAL 2 INCHES OF #4 STONE TO MAINTAIN PROPER DEPTH. THEY WILL BE MAINTAINED IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE SITE. IMMEDIATELY REMOVE OBJECTIONABLE MATERIAL SPILLED, WASHED OR TRACKED ONTO THE CONSTRUCTION ENTRANCE OR ROADWAYS.
3. SEDIMENT WILL BE REMOVED FROM HARDWARE CLOTH AND GRAVEL INLET PROTECTION, BLOCK AND GRAVEL INLET PROTECTION, ROCK DOUGHNUT INLET PROTECTION AND ROCK PIPE INLET PROTECTION WHEN THE DESIGNED STORAGE CAPACITY HAS BEEN HALF FILLED WITH SEDIMENT. ROCK WILL BE CLEANED OR REPLACED WHEN THE SEDIMENT POOL NO LONGER DRAINS AS DESIGNED. DEBRIS WILL BE REMOVED FROM THE ROCK AND HARDWARE CLOTH TO ALLOW PROPER DRAINAGE. SILT SACKS WILL BE EMPTIED ONCE A WEEK AND AFTER EVERY RAIN EVENT. SEDIMENT WILL BE REMOVED FROM AROUND BEAVER DAMS, DANDY SACKS AND SOCKS ONCE A WEEK AND AFTER EVERY RAIN EVENT.
4. DIVERSION DITCHES WILL BE CLEANED OUT IMMEDIATELY TO REMOVE SEDIMENT OR OBSTRUCTIONS FROM THE FLOW AREA. THE DIVERSION RIDGES WILL ALSO BE REPAIRED. SWALES MUST BE TEMPORARILY STABILIZED WITHIN 21 CALENDAR DAYS OF CEASE OF ANY PHASE OF ACTIVITY ASSOCIATED WITH A SWALE.
5. SEDIMENT WILL BE REMOVED FROM BEHIND THE SEDIMENT FENCE WHEN IT BECOMES HALF FILLED. THE SEDIMENT FENCE WILL BE REPAIRED AS NECESSARY TO MAINTAIN A BARRIER. STAKES MUST BE STEEL. STAKE SPACING WILL BE 6 FEET MAX. WITH THE USE OF EXTRA STRENGTH FABRIC, WITHOUT WIRE BACKING. STAKE SPACING WILL BE 8 FEET MAX. WHEN STANDARD STRENGTH FABRIC AND WIRE BACKING ARE USED. IF ROCK FILTERS ARE DESIGNED AT LOW POINTS IN THE SEDIMENT FENCE THE ROCK WILL BE REPAIRED OR REPLACED IF IT BECOMES HALF FULL OF SEDIMENT, NO LONGER DRAINS AS DESIGNED OR IS DAMAGED.
6. SEDIMENT WILL BE REMOVED FROM SEDIMENT TRAPS WHEN THE DESIGNED STORAGE CAPACITY HAS BEEN HALF FILLED WITH SEDIMENT. THE ROCK WILL BE CLEANED OR REPLACED WHEN THE SEDIMENT POOL NO LONGER DRAINS OR WHEN THE ROCK IS DISLODGED. BAFFLES WILL BE REPAIRED OR REPLACED IF THEY COLLAPSE, TEAR, DECOMPOSE OR BECOME INEFFECTIVE. THEY WILL BE REPLACED PROMPTLY. SEDIMENT WILL BE REMOVED FROM BAFFLES WHEN DEPOSITS REACH HALF THE HEIGHT OF THE 1ST BAFFLE. FLOATING SKIMMERS WILL BE INSPECTED WEEKLY AND WILL BE KEPT CLEAN.
7. SEDIMENT WILL BE REMOVED FROM THE SEDIMENT BASIN WHEN THE DESIGN STORAGE CAPACITY HAS BEEN HALF FILLED WITH SEDIMENT. ROCK WILL BE CLEANED OR REPLACED WHEN THE SEDIMENT POOL NO LONGER DRAINS OR IF THE ROCK IS DISLODGED. BAFFLES WILL BE REPAIRED OR REPLACED IF THEY COLLAPSE, TEAR, DECOMPOSE OR BECOME INEFFECTIVE. THEY WILL BE REPLACED PROMPTLY. SEDIMENT WILL BE REMOVED FROM BAFFLES WHEN DEPOSITS REACH HALF THE HEIGHT OF THE 1ST BAFFLE. FLOATING SKIMMERS WILL BE INSPECTED WEEKLY AND WILL BE KEPT CLEAN.
8. ALL SEEDED AREAS WILL BE FERTILIZED, RESEED AS NECESSARY AND MULCHED ACCORDING TO SPECIFICATIONS IN THE VEGETATIVE PLAN TO MAINTAIN A VIGOROUS, DENSE VEGETATIVE COVER. ALL SLOPES WILL BE STABILIZED WITHIN 21 CALENDAR DAYS. ALL OTHER AREAS WILL BE STABILIZED WITHIN 15 WORKING DAYS.
9. FLOCCULANTS WILL BE USED TO ADDRESS TURBIDITY ISSUES. THE PUMPS, TANKS, HOSES AND INJECTION SYSTEMS WILL BE CHECKED FOR PROBLEMS OR TURBID DISCHARGES DAILY.

**EROSION CONTROL NOTES:**

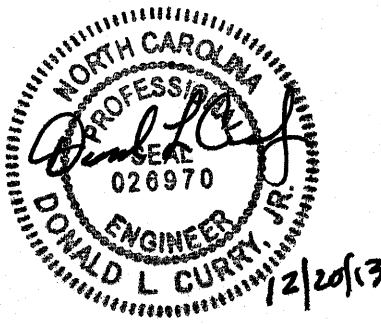
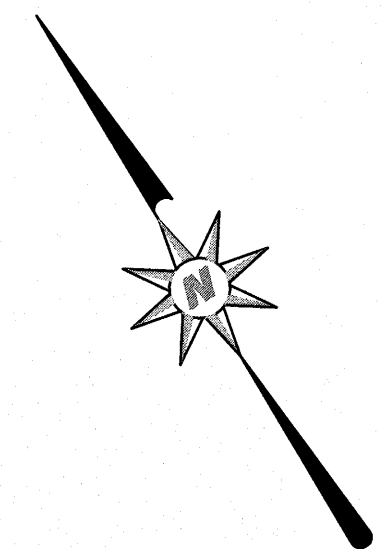
1. THE TEMPORARY DIVERSION DITCHES, SILT FENCE, AND LIMITS OF DISTURBANCE SHOWN ON THIS PLAN ARE GRAPHICAL REPRESENTATIONS OF THE ACTUAL EROSION CONTROL MEASURES THAT WILL BE INSTALLED UNDER THIS PROJECT. DO TO THE SCALE OF THIS DRAWING, THESE MEASURES ARE GRAPHICALLY DEPICTED BEYOND WHERE THEY WILL ACTUALLY BE INSTALLED IN THE FIELD.
2. DIST AREA = 1.43 AC
3. ANY GRADING BEYOND THE DENUDE LIMITS SHOWN IN THE PLAN IS A VIOLATION OF THE NEW HANOVER COUNTY EROSION CONTROL ORDINANCE & IS SUBJECT TO A FINE.
4. GRADING MORE THAN 1 ACRE WITHOUT AN APPROVED EROSION CONTROL PLAN IS A VIOLATION OF THE NEW HANOVER COUNTY EROSION CONTROL ORDINANCE & IS SUBJECT TO A FINE.
5. ALL AREAS MUST BE SEEDED & MULCHED WITHIN 7 OR 14 CALENDAR DAYS. REFER TO EROSION CONTROL DETAILS AND EROSION CONTROL ORDINANCE FOR ADDITIONAL REQUIREMENTS.
6. A PRECONSTRUCTION MEETING WITH NEW HANOVER COUNTY IS REQUIRED PRIOR TO ANY ACTIVITY ON SITE. CONTACT NEW HANOVER COUNTY ENGINEERING AT 910-798-7139.

**EROSION CONTROL LEGEND**



**WILMINGTON**  
NORTH CAROLINA  
Public Services - Engineering Division  
APPROVED DRAINAGE PLAN  
Date: \_\_\_\_\_ Permit # \_\_\_\_\_  
Signed: \_\_\_\_\_

**Approved Construction Plan**  
Name \_\_\_\_\_ Date \_\_\_\_\_  
Planning \_\_\_\_\_  
Traffic \_\_\_\_\_  
Fire \_\_\_\_\_



SCALE: 1" = 20'  
0 20 40 50 60

NOT FOR CONSTRUCTION

**SHOPS AT COLLEGE RD. - WILMINGTON, NC**  
**EROSION CONTROL PLAN**

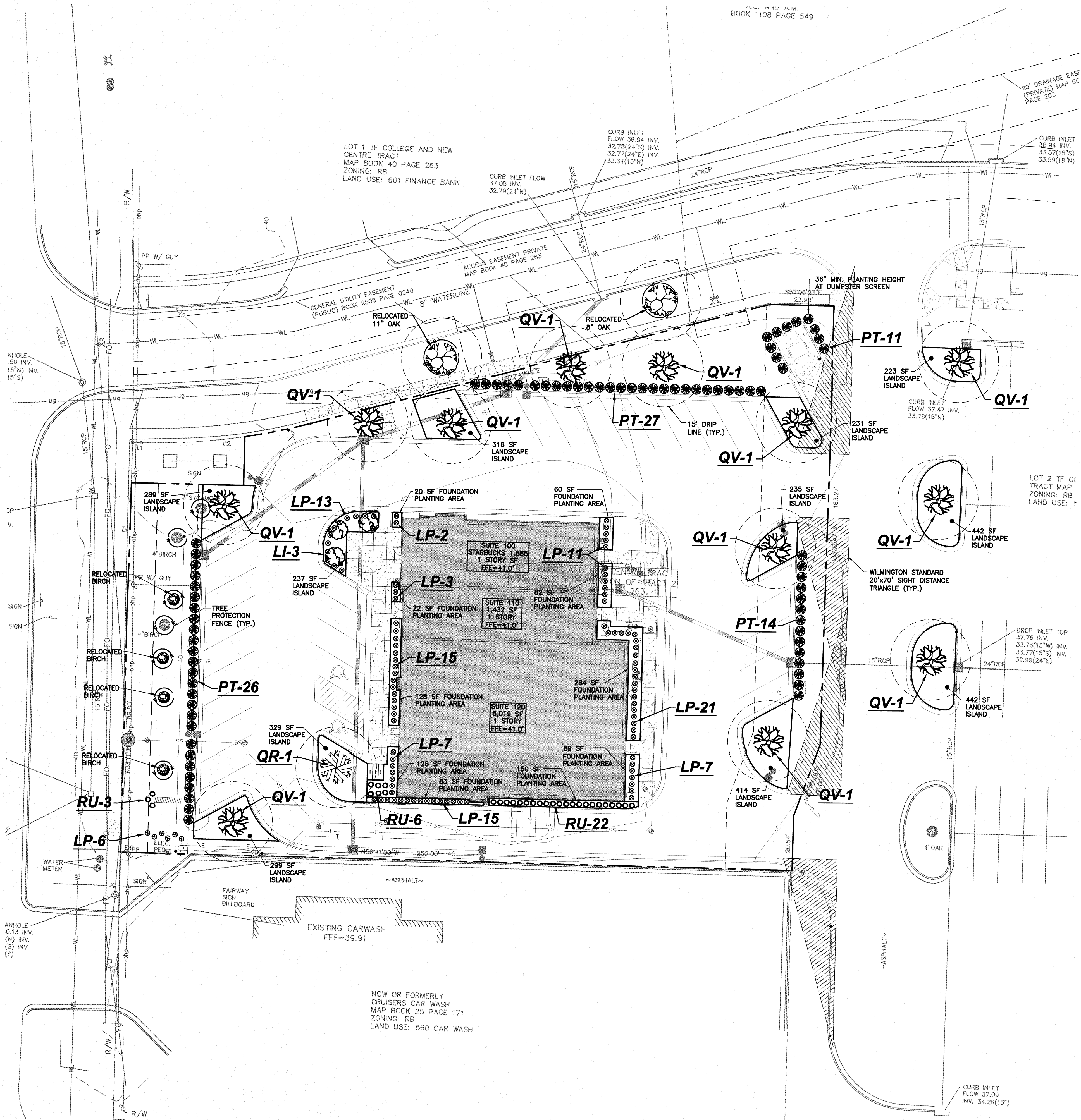
**The Curry Engineering Group, PLLC**  
www.curryeng.com  
12/20/13  
C-06

| REVISIONS | CITY OF WILMINGTON COMMENTS | DATE          | FILE NO.   |
|-----------|-----------------------------|---------------|------------|
| 1         | 12/20/13                    | OCTOBER, 2013 | 2013 - 007 |

HORIZ. SCALE: 1" = 20'  
VERT. SCALE: 1" = 20'  
SHEET SIZE: 24 x 36



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- NOTES:
1. LANDSCAPING SHALL COMPLY WITH THE CITY OF WILMINGTON LANDSCAPING ORDINANCE.
  2. ALL DISTURBED AREAS NOT IDENTIFIED FOR PLANTINGS AND MULCH SHALL BE SEEDED. SEE DETAIL SHEETS FOR REQUIREMENTS.
  3. FOR ALL EVERGREEN AND CANOPY TREES, THE MIN. CALIPER INCHES AT PLANTING IS 2".
  4. MINIMUM HEIGHT FOR SHRUBS AT THE DUMPSTER SCREEN IS 36"
  5. ALL PLANTED AND RETAINED LIVING MATERIAL, REQUIRED TO MEET THE CITY OF WILMINGTON LANDSCAPING REGULATIONS SHALL BE PERPETUALLY PROTECTED AND MAINTAINED TO PROFESSIONALLY ACCEPTED STANDARDS BY JOINT AND SEVERAL RESPONSIBILITY OF THE OWNER, OCCUPANT, TENANT, AND RESPECTIVE AGENTS OF THE PROPERTY ON WHICH THE MATERIAL IS LOCATED.
  6. IF AN IRRIGATION SYSTEM IS INSTALLED IT SHALL BE EQUIPPED WITH A RAIN AND FREEZE SENSOR.
  7. NO OBSTRUCTION SHALL BE PERMITTED BETWEEN 30" AND 10' HIGH WITHIN THE SIGHT DISTANCE TRIANGLES.

| KEY               | QTY | BOTANICAL NAME                      | COMMON NAME       | TYPE    | SIZE | HEIGHT   |
|-------------------|-----|-------------------------------------|-------------------|---------|------|----------|
| LARGE SHADE TREES |     |                                     |                   |         |      |          |
| QV                | 12  | Quercus virginiana                  | Southern Live Oak | Evergm. | 2" c | Min. 8'  |
| QR                | 1   | Quercus robur Q. alba chinmischmidt | Crimson Spire Oak | Decid.  | 2" c | Min. 8'  |
| SMALL SHADE TREES |     |                                     |                   |         |      |          |
| LI                | 3   | Lagerstroemia indica                | Crape Myrtle      | Decid.  | 2" c | Min. 8'  |
| SHRUBS            |     |                                     |                   |         |      |          |
| LP                | 98  | Loropetalum chinensis 'danuma'      | Loropetalum Dwarf | Decid.  | 18"  | Min. 18" |
| PT                | 80  | Pittosporum tobira                  | Pittosporum       | Evergm. | 36"  | Min. 36" |
| RU                | 31  | Rhapiolepis indica                  | Indian Hawthorne  | Evergm. | 18"  | Min. 18" |

LANDSCAPE LEGEND:

LARGE SHADE TREES

- RELOCATED BIRCH
- RELOCATED OAK
- CRIMSON SPIRE OAK (QR)
- SOUTHERN LIVE OAK (QV)

SMALL SHADE TREES

- CRAPE MYRTLE (LI)

SHRUBS

- PITTIOSPORUM (PT)
- INDIAN HAWTHORNE (RU)
- LOROPETALUM DWARF (LP)

TREE PROTECTION FENCE

LANDSCAPING CALCULATIONS:

1. PRIMARY STREET/PAVING (COLLEGE RD.)  
SEC. 18-477  
REQUIRED (PER 600 SF) = 1 CANOPY SHADE TREE, 6 SHRUBS  
TOTAL SF = 3,450 (135' x 25')  
REQUIRED - 6 CANOPY TREES, 36 SHRUBS  
PROVIDED - 6 CANOPY TREES, 36 SHRUBS

2. FOUNDATION PLANTINGS:  
SEC. 18-490  
REQUIRED PLANTING AREA = 12% \* AREA OF BUILDING FACE  
REQUIRED PLANTING AREA (SOUTH) = 0.12 x 23'H x 85 LF  
= 235 SF  
REQUIRED PLANTING AREA (WEST) = 0.12 x 23'H x 105 LF  
= 290 SF  
REQUIRED PLANTING AREA (NORTH) = 0.12 x 23'H x 115 LF  
= 321 SF  
REQUIRED PLANTING AREA (EAST) = 0.12 x 23'H x 115 LF  
= 318 SF  
PROVIDED PLANTING AREA (EAST) = 318 SF

3. INTERIOR LANDSCAPING:  
SEC. 18-481  
\*PARKING FACILITY SHALL BE SHADED BY CANOPY TREES TO PROVIDE AT LEAST 20% PARKING LOT COVERAGE AT MATURITY.  
\*PROVIDE AT LEAST ONE TREE PER 12'x18' PLANTING ISLANDS  
\*AT LEAST 75% OF TREES PROVIDED UNDER INTERIOR LANDSCAPING SHALL BE A LARGE SHADE/CANOPY SPECIES.  
\*MAX DISTANCE FROM A SHADE TREE TO A PARKING SPACE = 120'  
PARKING LOT AREA = 23,855 SF  
REQUIRED COVERAGE (20%) = 0.20 \* 23,855 SF = 4,771 SF  
PROVIDED COVERAGE = 4 TREES x 707 SF/EA x 0.5 = 1,414 SF  
7 TREES x 707 SF/EA = 4,949 SF  
TOTAL = 6,363 SF

4. OVERALL SITE REQUIREMENT  
REQUIRED = 15 TREES/ACRE = 1.05\*15 = 16 TREES  
PROVIDED = 17 TREES

5. GROUND COVER  
NONE PROVIDED

Approved Construction Plan

Name \_\_\_\_\_ Date \_\_\_\_\_

Planning \_\_\_\_\_

Traffic \_\_\_\_\_

Fire \_\_\_\_\_

WILMINGTON  
NORTH CAROLINA  
Public Services • Engineering Division  
APPROVED DRAINAGE PLAN

Date: \_\_\_\_\_ Permit # \_\_\_\_\_

Signed: \_\_\_\_\_

North arrow pointing towards the top right.

SCALE: 1" = 20'

0 20 40 50 60

NOT FOR CONSTRUCTION

12/20/13

SHOPS AT COLLEGE RD. - WILMINGTON, NC

LANDSCAPING PLAN

C-07

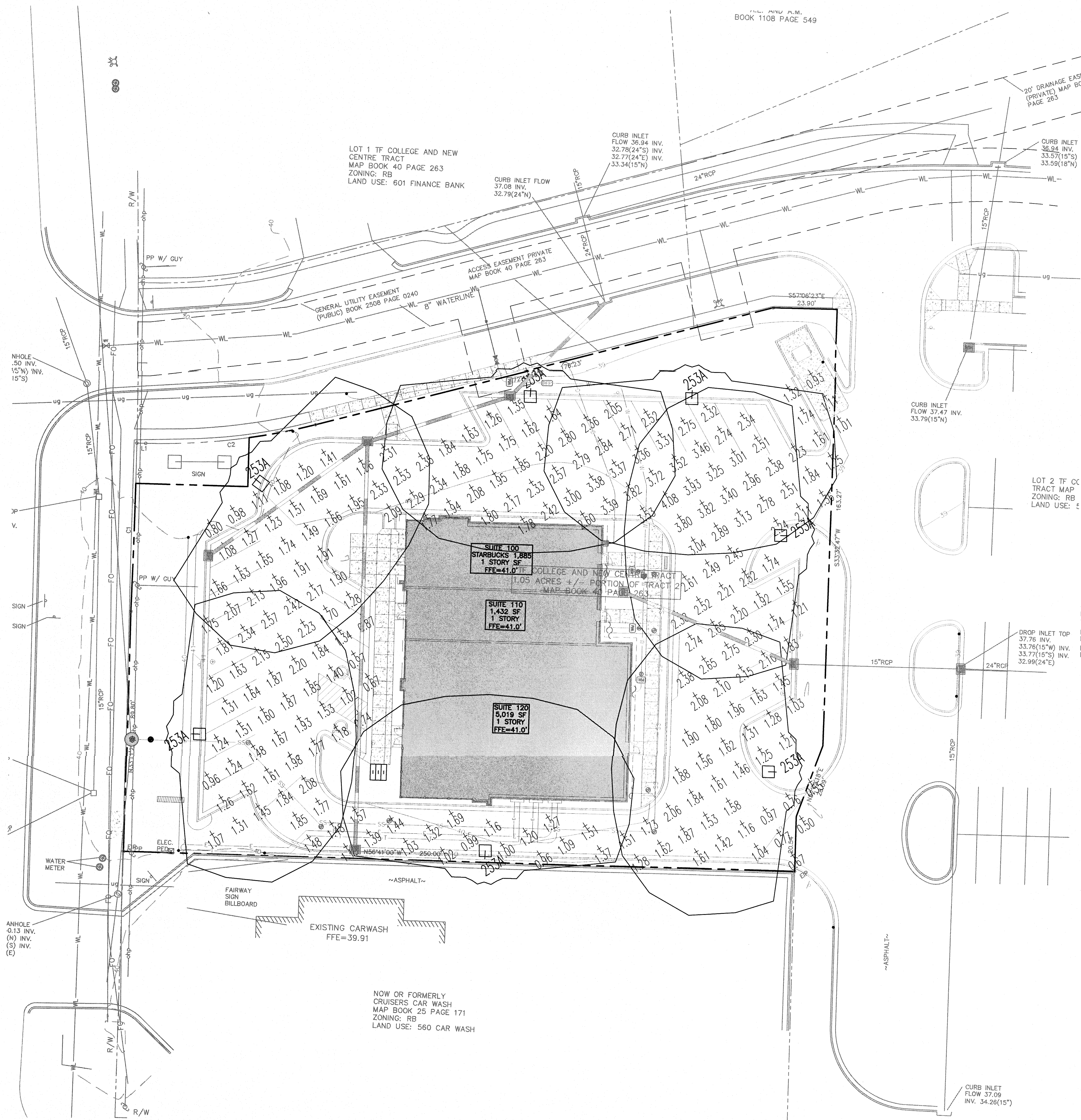
The Curry Engineering Group, PLLC

www.curryeng.com

205 BOULEVARD  
FARGO, N.D. 58103  
PHONE: (701) 552-0849  
MOBILE: (701) 888-9857  
NC LIC. NO. P-0799



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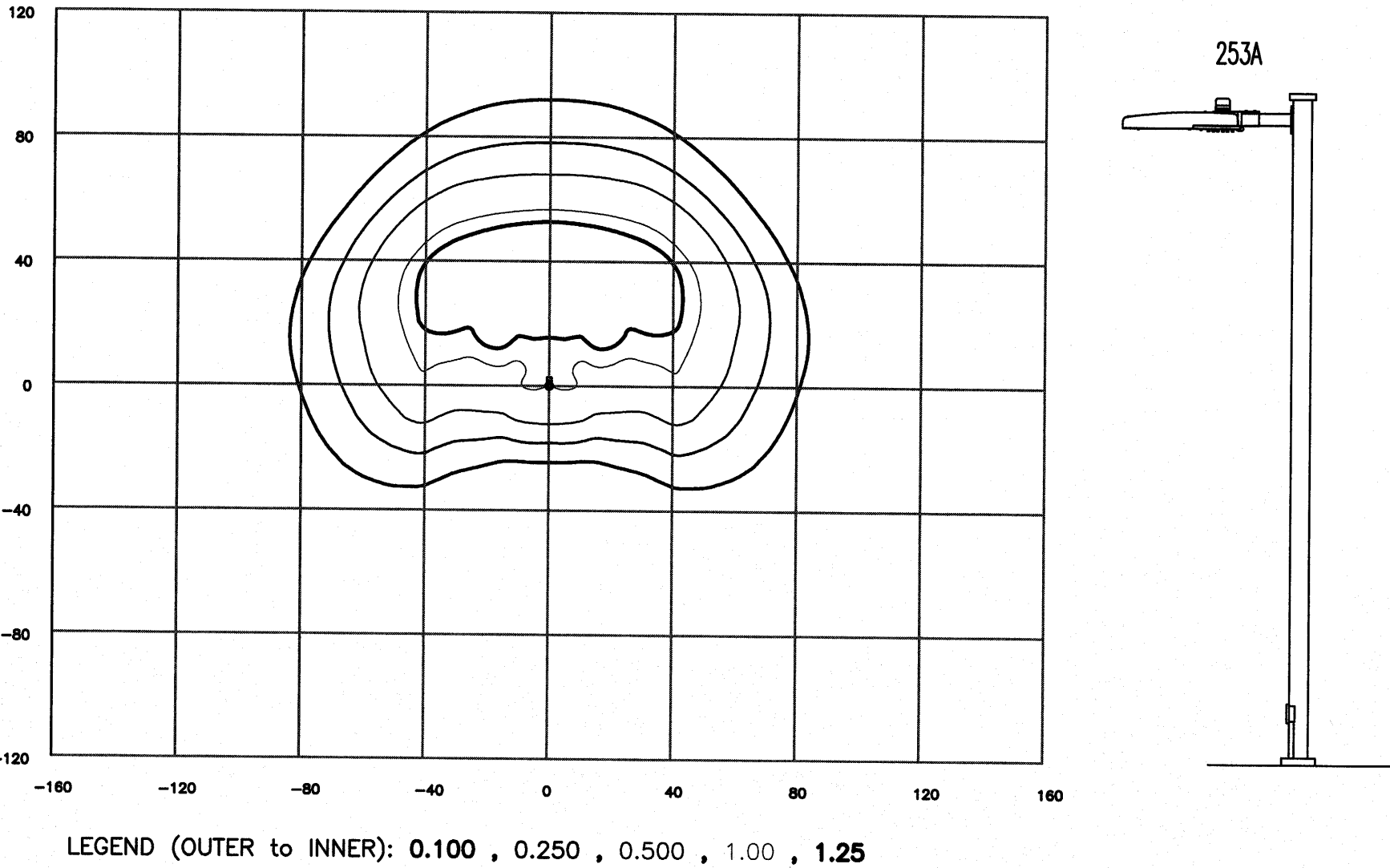


ISOFOOTCANDLE CURVES

FIXTURE: LED205, EMM  
MOUNTING HEIGHT: 30 FT  
LIGHT SOURCE: 180 LED'S, 4000K  
PATTERN: TYPE III, B2-U0-G2 (zero light at or above 90 degrees)

ASSY# L12KLED205LS3MC  
POLE ASSY# PLS30ABDSQBLC (BLACK)

NOTE: THE FOOTCANDLE READINGS BELOW ARE MAINTAINED AND HAVE BEEN DEPRECIATED FOR LED LUMEN DEPRECIATION AND LUMINAIRE DIRT DEPRECIATION. FOR INITIAL FOOTCANDLES, DIVIDE THE READINGS BELOW BY .85.



| CALCULATION SUMMARY |                 |               |       |       |       |      |      |      |         |
|---------------------|-----------------|---------------|-------|-------|-------|------|------|------|---------|
| AREA NAME           | DIMENSIONS      | GRID / TYPE   | # PTS | SPAC  | GROUP | Ave  | MAX  | MIN  | MAX/MIN |
| parking             | 496.50x440.89Ft | parking / H-H | 230   | 10.00 | <+>   | 1.89 | 4.08 | 0.50 | 8.12    |

| Shops at College Rd (13-0160) LUMINAIRE SCHEDULE |        |   |           |        |                             |      |     |
|--|--------|---|-----------|--------|-----------------------------|------|-----|
| TYP  | SYMBOL | DESCRIPTION   | LAMP      | LUMENS | MOUNTING/BALLAST            | LLF  | QTY |
| 253A   | ⬢      | GE LIGHTING LED205_3_1/POLE<br>(1) 2053 LED205_3_1/POLE | (1) 4000K | 13620  | 30' MT HT<br>SiteLighter II | 0.85 | 7   |

LIGHTING DESIGN TOLERANCE

The calculated footcandle light levels in this lighting design are predicted values and are based on specific information that has been supplied to Duke Energy Progress. Any inaccuracies in the supplied information, differences in luminaire installation, lighted area geometry including elevation differences, reflective properties of surrounding surfaces, obstructions (foliage or otherwise) in the lighted area, or lighting from sources other than listed in this design may produce different results from the predicted values. Normal tolerances of voltage, lamp output, and ballast and luminaire manufacture will also affect results.

PROPRIETARY & CONFIDENTIAL

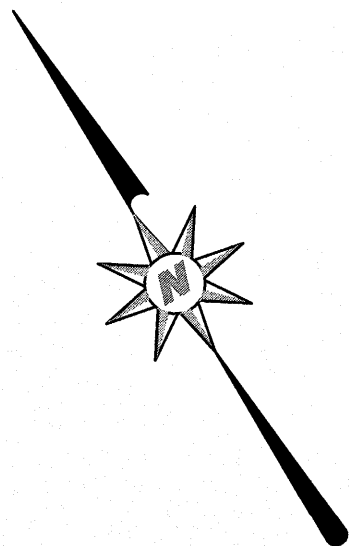
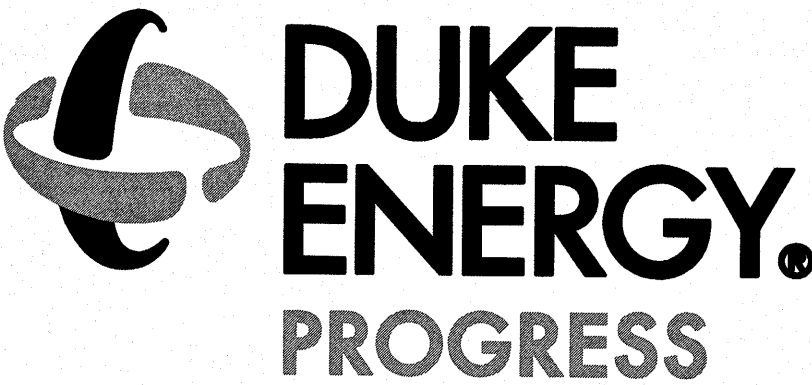
This document together with the concepts and designs presented herein, presented as an instrument of service, is the sole property of Duke Energy Progress, and is intended only for the specific purpose and prospective client as stated in the title block of this drawing. Any use, copying, reproduction or disclosure of the drawing, design or any information contained herein by the prospective customer or other entities, including without limitation, architects, engineers, or equipment manufacturers is hereby expressly prohibited and shall not be permitted absent prior written consent from, and payment of compensation to Duke Energy Progress. Duke Energy Progress disclaims any liability or responsibility for any unauthorized use of or reliance on this document.

|                                    |                |
|------------------------------------|----------------|
| SHOPS AT COLLEGE ROAD              |                |
| WILMINGTON NC                      |                |
| SITE LIGHTING PLAN                 |                |
| Designed by DEP LIGHTING SOLUTIONS |                |
| Reviewed by R. Simpkins            | Scale 1" = 30' |
| Date 12/05/2013                    | Size "Arch D"  |
| Description: LED205 fixtures       |                |
| Drawing No. 13-0160A               | Sht. 1 OF 1    |

Approved Construction Plan

| Name     | Date |
|----------|------|
| Planning |      |
| Traffic  |      |
| Fire     |      |

|  |                |
|--|----------------|
| CITY OF WILMINGTON<br>NORTH CAROLINA   |                |
| Public Services • Engineering Division |                |
| APPROVED DRAINAGE PLAN                 |                |
| Date: _____                            | Permit # _____ |
| Signed: _____                          |                |



SCALE: 1" = 20'  
0 20 40 50 60  
NOT FOR CONSTRUCTION

SHOPS AT COLLEGE RD. - WILMINGTON, NC

LIGHTING PLAN

NO BOX 2008  
FUGUAY AVENUE  
27536  
PHONE: (919) 552-0849  
MOBILE: (919) 880-9857  
NC LIC. NO. P-0799

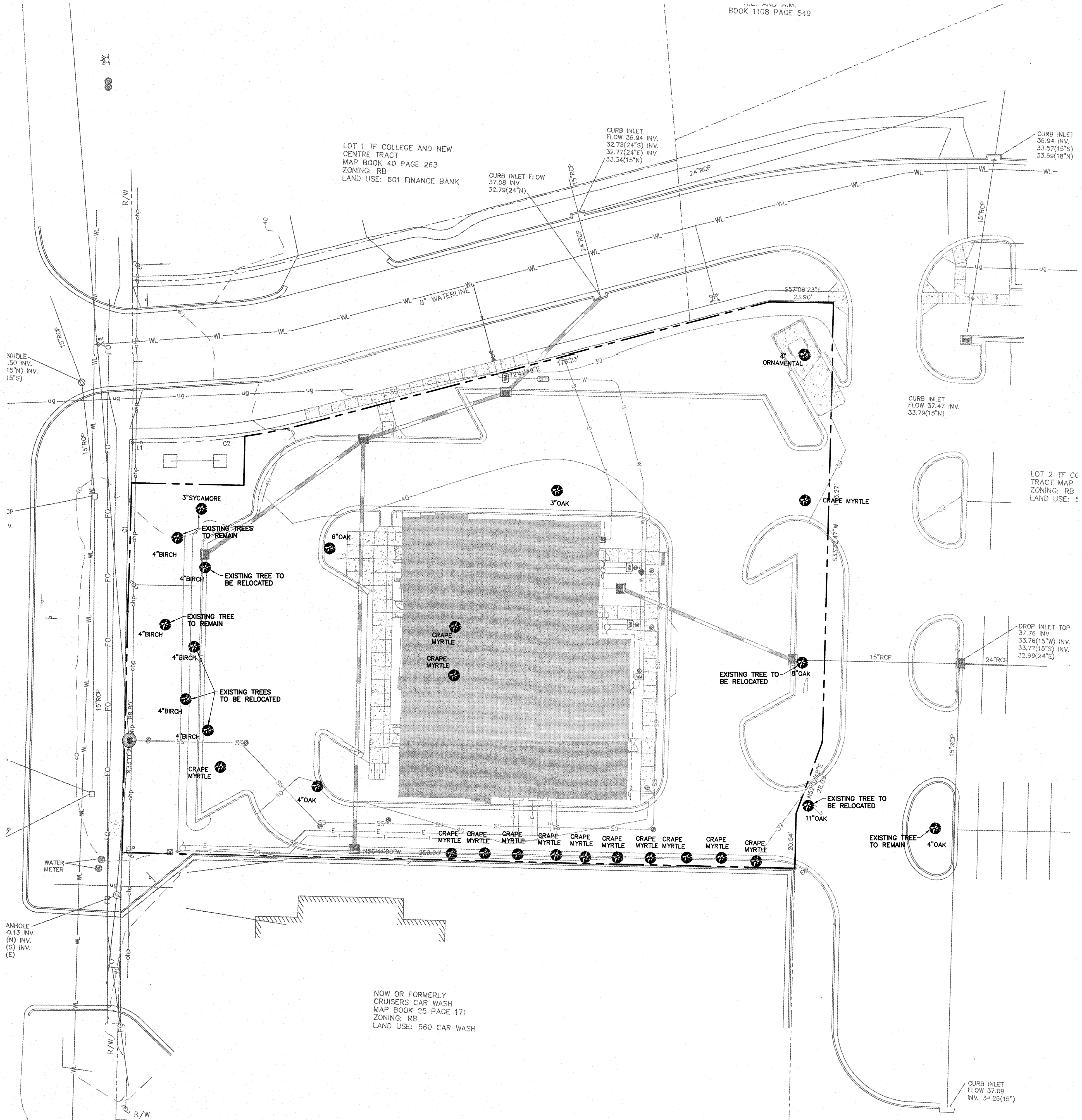
The Curry Engineering  
Group, PLLC  
www.curryeng.com

C-08

REVISIONS  
1 12/20/13 CITY OF WILMINGTON COMMENTS #1  
DATE: OCTOBER, 2013  
HORIZ. SCALE: 1" = 20'  
FILE NO. 2013 - 007  
ORIG. SHEET SIZE: 24 x 36



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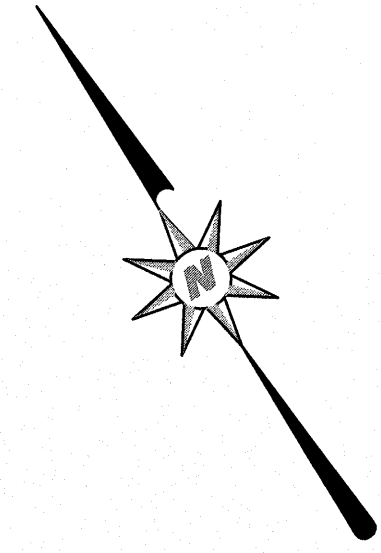
- NOTES:
- 1. REFER TO LANDSCAPE PLAN FOR LOCATIONS OF ALL RELOCATED TREES.
  - 2. ALL TREES SHOWN ON THIS PLAN THAT ARE NOT CALLED OUT TO BE RELOCATED OR TO REMAIN SHALL BE REMOVED.

Approved Construction Plan

| Name     | Date |
|----------|------|
| Planning |      |
| Traffic  |      |
| Fire     |      |

**CITY OF WILMINGTON**  
NORTH CAROLINA  
Public Services • Engineering Division  
APPROVED DRAINAGE PLAN

Date: \_\_\_\_\_ Permit # \_\_\_\_\_  
Signed: \_\_\_\_\_



SCALE: 1" = 20'

0 20 40 50 60

NOT FOR CONSTRUCTION

**SHOPS AT COLLEGE RD. - WILMINGTON, NC**

**TREE PRESERVATION PLAN**

PD BOX 2018  
1000 N. WILMINGTON AVENUE  
WILMINGTON, NC 28401  
PHONE: (919) 552-0849  
FAX: (919) 552-0843  
NC LIC. NO. P-0799

**The Curry Engineering Group, PLLC**  
www.curryeng.com

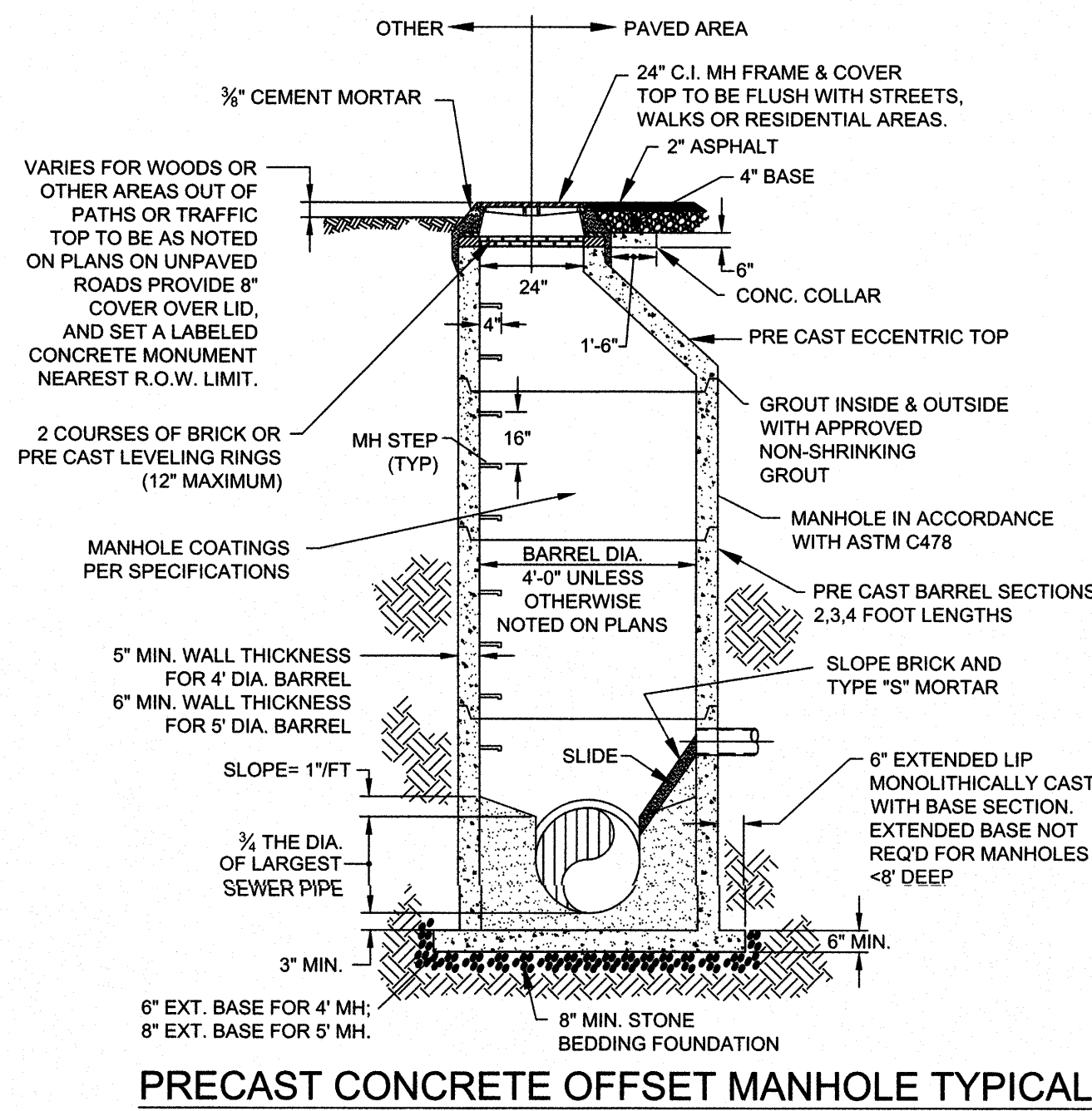
REVISIONS

| NO. | DATE     | DESCRIPTION                    |
|-----|----------|--------------------------------|
| 1   | 12/20/13 | CITY OF WILMINGTON COMMENTS #1 |

DATE: OCTOBER, 2013  
FILE NO.: 2013 - 007  
HORIZ. SCALE: 1" = 20'  
VERT. SCALE: 1" = 20'  
SHEET SIZE: 24" x 36"

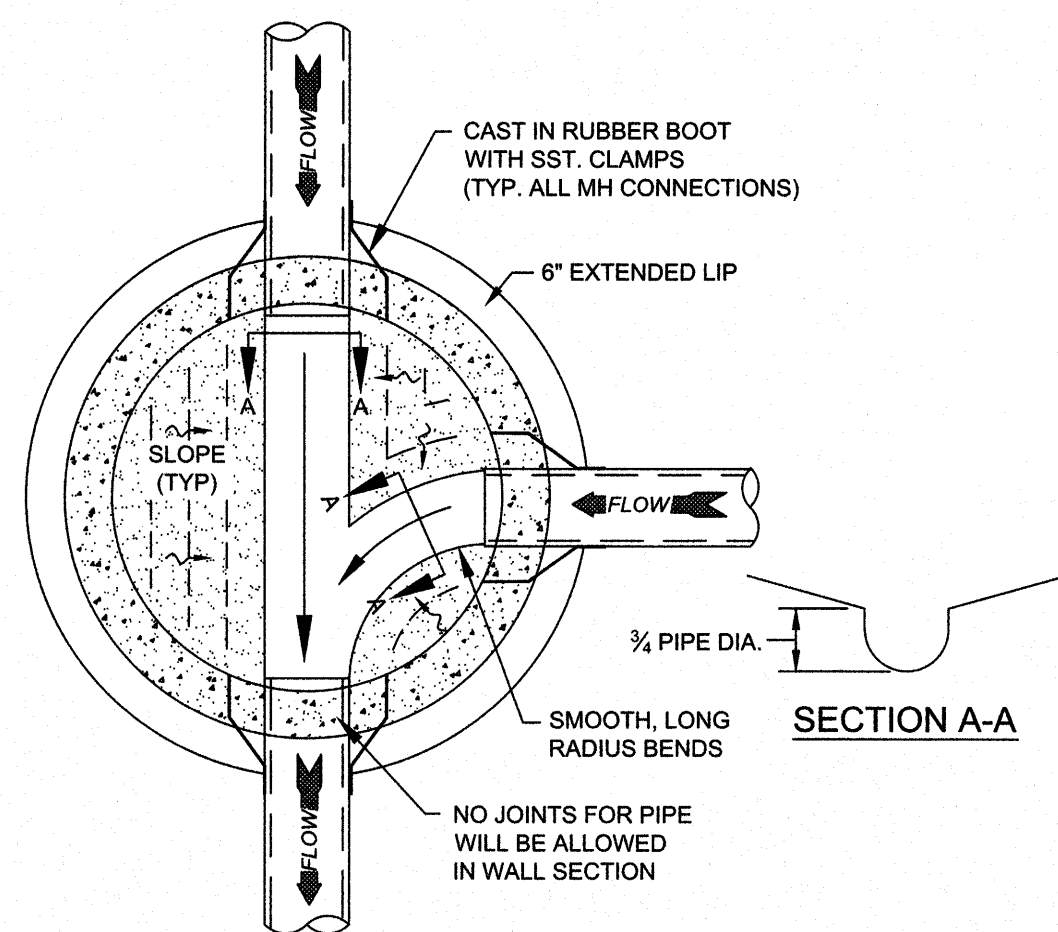
**C-09**





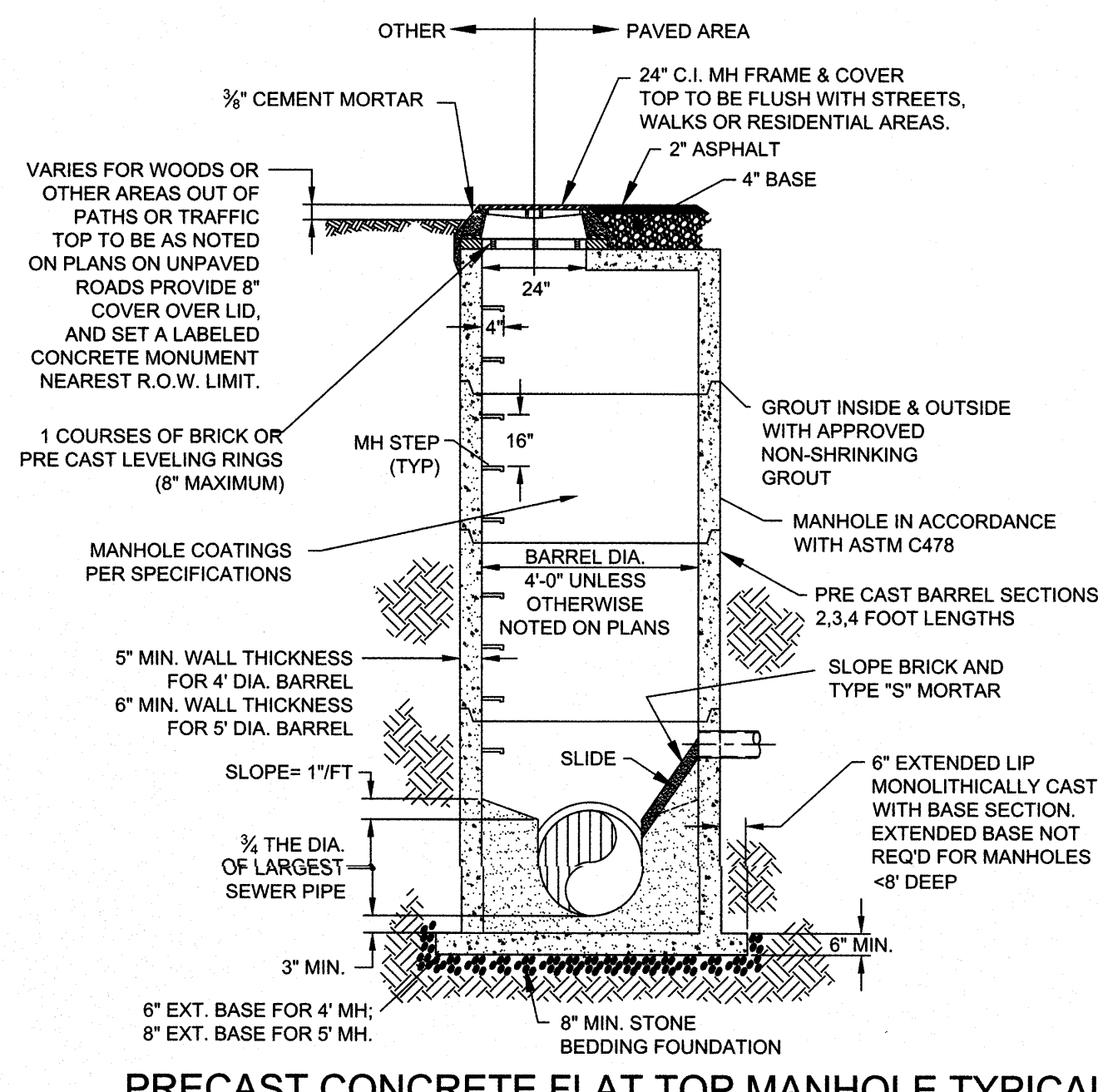
**PRECAST CONCRETE OFFSET MANHOLE TYPICAL**

(LESS THAN 30" DROP)  
NOT TO SCALE



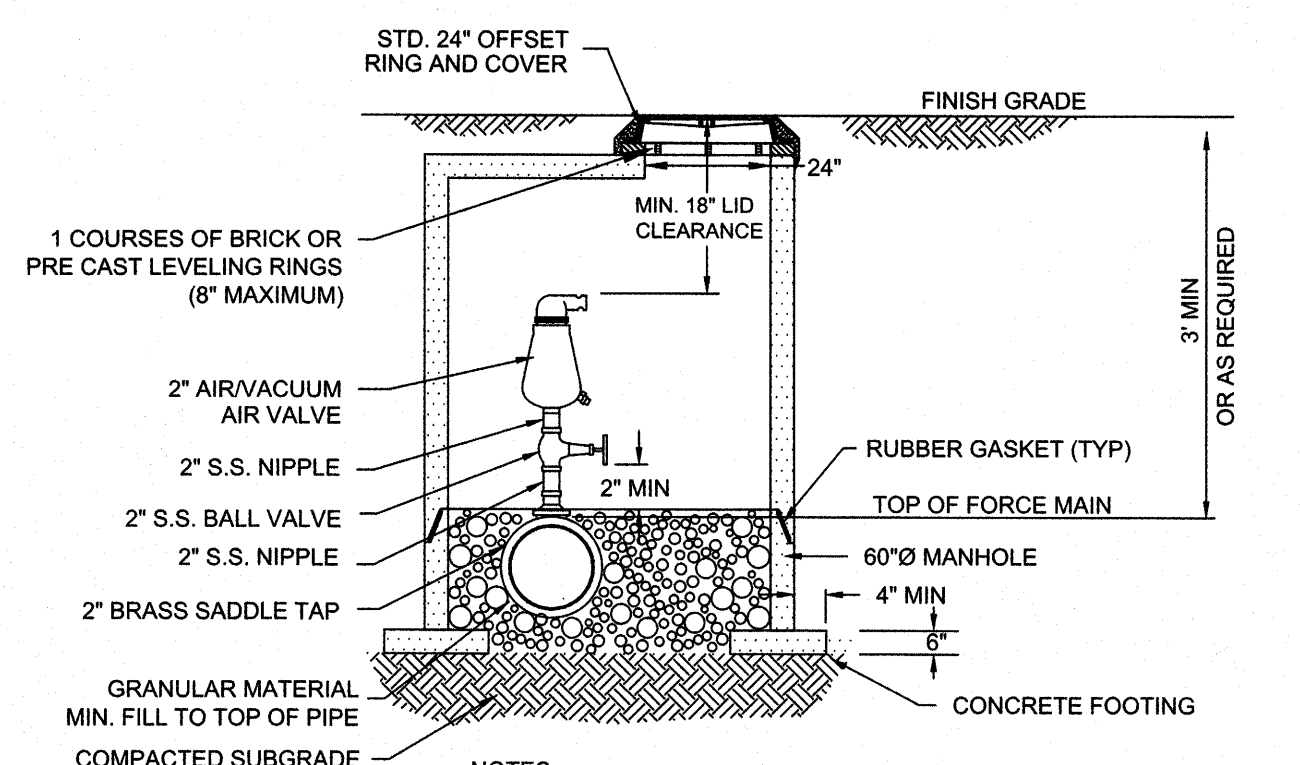
**MANHOLE FLOOR PLAN**

NOT TO SCALE



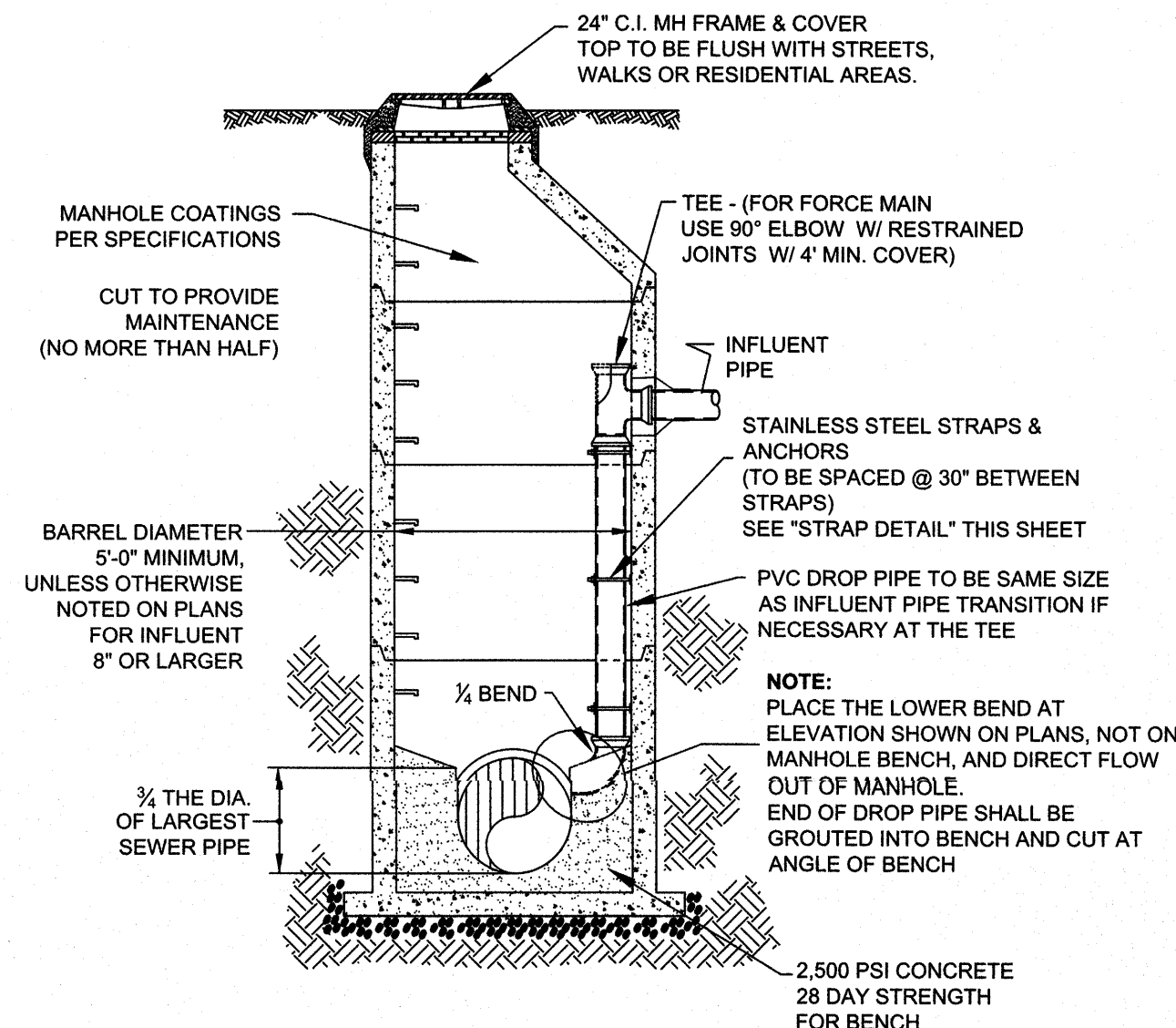
**PRECAST CONCRETE FLAT TOP MANHOLE TYPICAL**

(LESS THAN 30" DROP)  
NOT TO SCALE



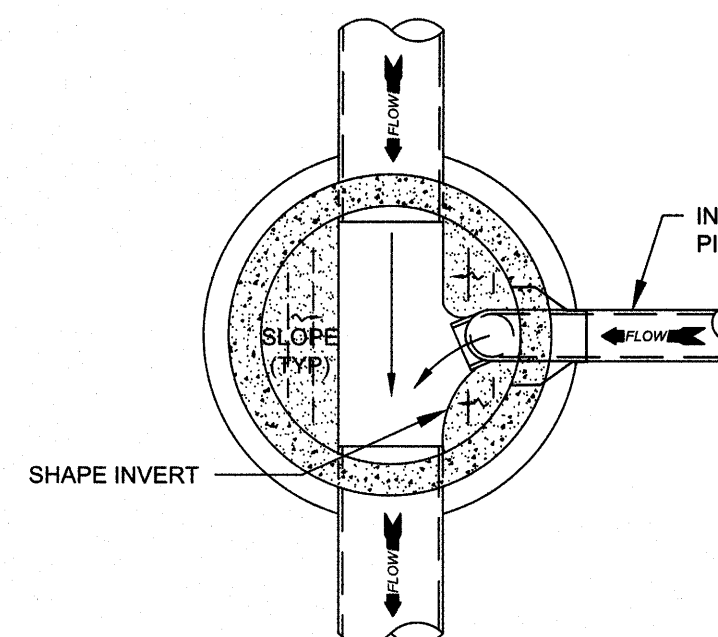
**AIR / VACUUM AND AIR  
RELEASE COMBINATION VALVE**

NOT TO SCALE



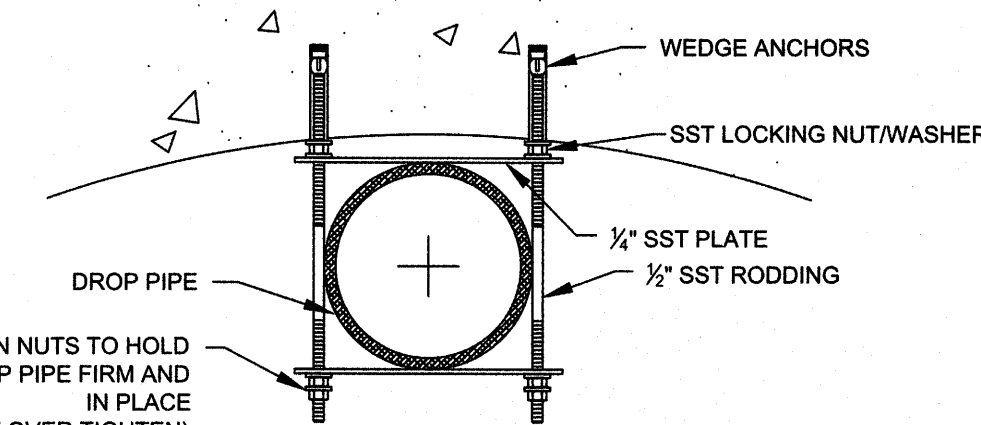
**DROP MANHOLE**

(MORE THAN 30" DROP)  
NOT TO SCALE



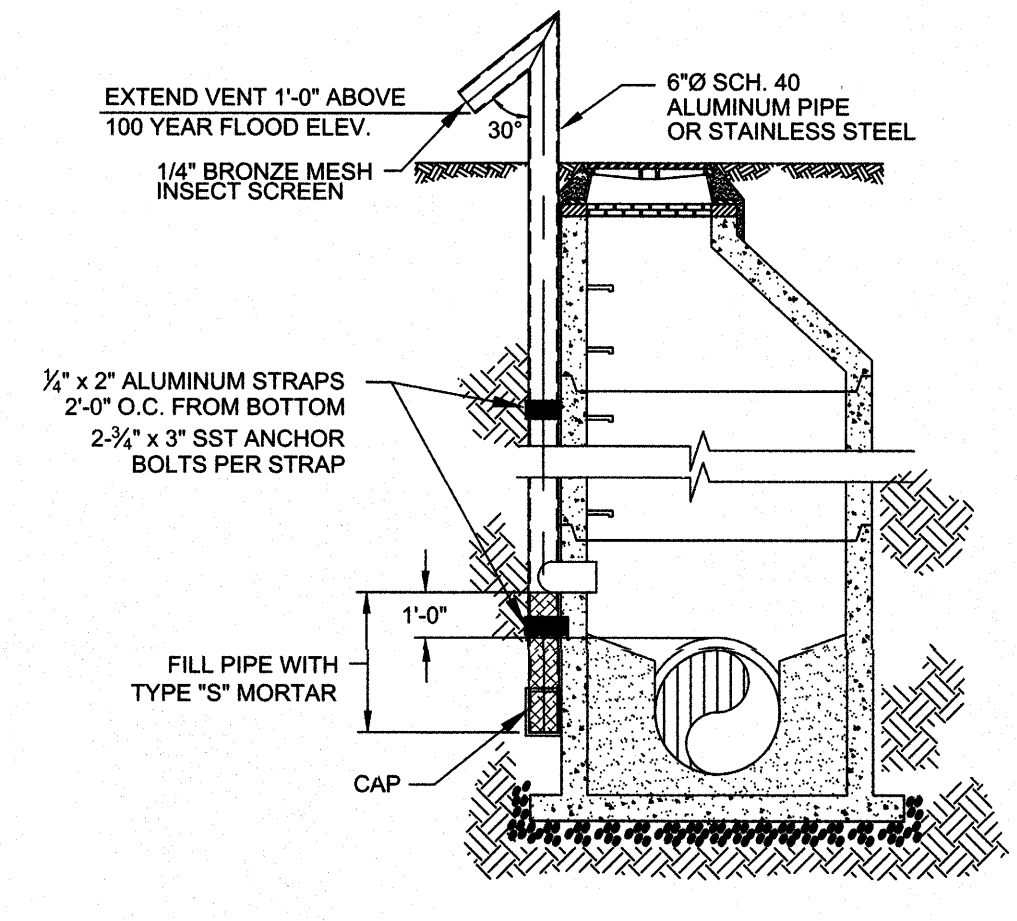
**DROP MANHOLE FLOOR PLAN**

NOT TO SCALE



**STRAP DETAIL**

NOT TO SCALE



**STANDARD VENT MANHOLE**

NOT TO SCALE

- SEWER GUARDS REQUIRED AT ALL MANHOLES. STAINLESS STEEL SEWER GUARDS REQUIRED AT MANHOLES LOCATED IN TRAFFIC AREAS.
- SERVICES SHALL BE PERPENDICULAR TO MAIN AND TERMINATE AT R/W LINE. SERVICES IN CUL-DE-SACS ARE REQUIRED TO BE PERPENDICULAR, OR MUST ORIGINATE IN MANHOLE AND TERMINATE AT RIGHT-OF-WAY LINE.
- ALL SERVICES TYING INTO DUCTILE IRON MAINS SHALL BE CONSTRUCTED OF CLASS 50, DIP, WITH PROTECTO 401 CERAMIC EPOXY LINING.
- MINIMUM 10' UTILITIES EASEMENT PROVIDED ALONG THE FRONTAGE OF ALL LOTS AND AS SHOWN FOR NEW DEVELOPMENTS.
- NO FLEXIBLE COUPLINGS SHALL BE USED.
- ALL STAINLESS STEEL FITTINGS SHALL BE 3/16".

**STANDARD SEWER NOTES**  
(REQUIRED ON ALL SEWER PLAN AND PROFILE SHEETS)

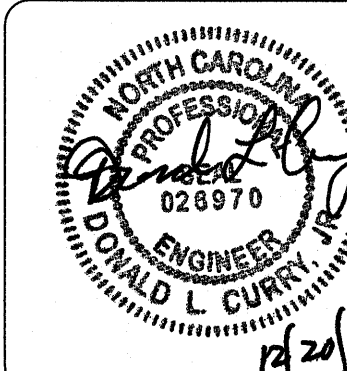
**GENERAL NOTES:**

- NO EXCAVATED MATERIAL SHALL BE PLACED IN ANY STREAM, DITCH OR DRAINAGE-WAY.
- THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES BEFORE ANY CONSTRUCTION BEGINS.
- THE CONTRACTOR IS RESPONSIBLE FOR TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES WHILE CONSTRUCTION IS IN PROGRESS.
- THE CONTRACTOR IS RESPONSIBLE FOR STABILIZATION OF ALL DISTURBED AREAS.
- THE CONTRACTOR IS RESPONSIBLE FOR LAY DOWN & STOCKPILE AREAS (TO ARRANGE AND INSURE COMPLIANCE WITH ALL LOCAL AND STATE REGULATIONS).

**THE DETAILS SHOWN HEREON SUPERCEDE CFPUA  
WRITTEN TECHNICAL SPECIFICATIONS VERSIONS 1.00 - 1.04**

**SANITARY SEWER  
STANDARD DETAILS**

**SANITARY SEWER STANDARD DETAILS  
SS-1**



**CAPE FEAR PUBLIC UTILITY AUTHORITY**  
235 GOVERNMENT CENTER DRIVE  
WILMINGTON, NC 28403  
OFFICE: (910)332-6560

DATE:  
1/9/12  
SCALE:  
N/A  
DRAWN BY:  
CFPUA  
CHECKED BY:  
CFPUA  
PROJECT NO.:

SHEET NO:  
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PO BOX 3018  
206 S. TUQUAY AVE.  
77326  
TUCUAY, TEXAS 77326  
TEL: (936) 552-8849  
FAX: (936) 552-2843  
MOBILE: (936) 880-9857  
NC LIC. NO. P-9799

**The Curry Engineering  
Group, PLLC**  
www.curryeng.com

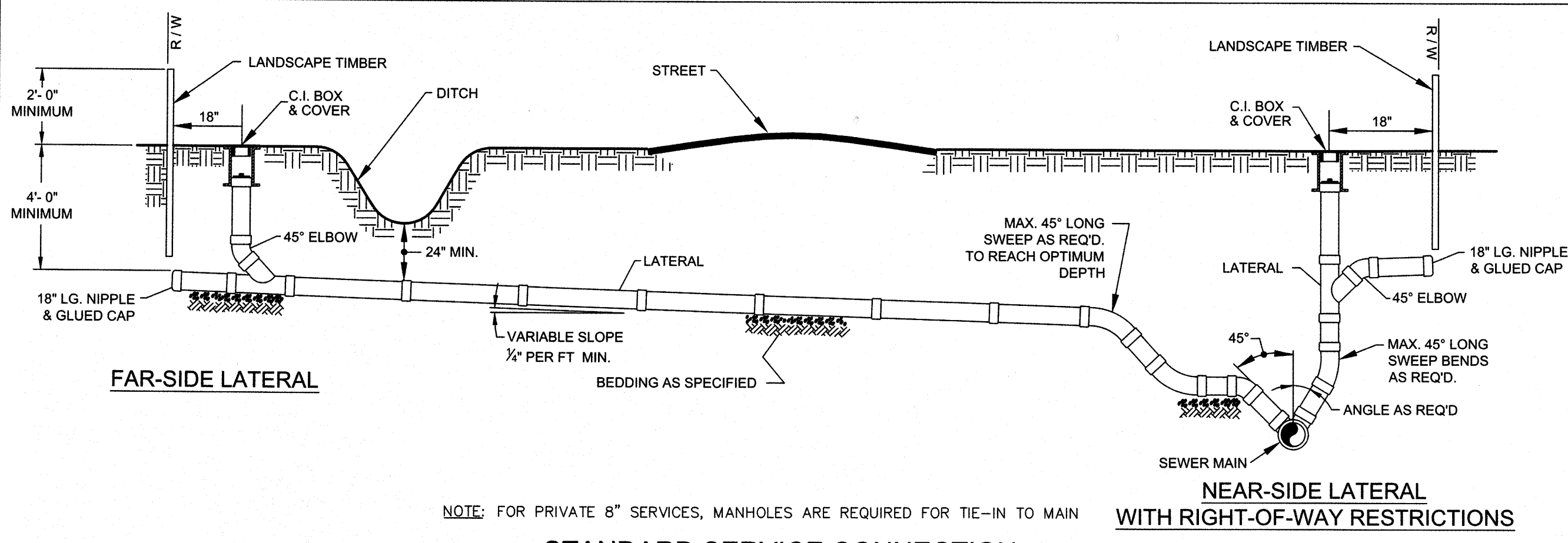
**SHOPS AT COLLEGE RD. - WILMINGTON, NC**  
**SANITARY SEWER DETAILS 1**

REVISIONS  
1 12/20/13 CITY OF WILMINGTON COMMENTS #1  
DATE: OCTOBER, 2013  
HORZ. SCALE:  
FILE NO. 2013 - 007  
ORIG. SHEET SIZE: 24 x 36

NOT FOR CONSTRUCTION

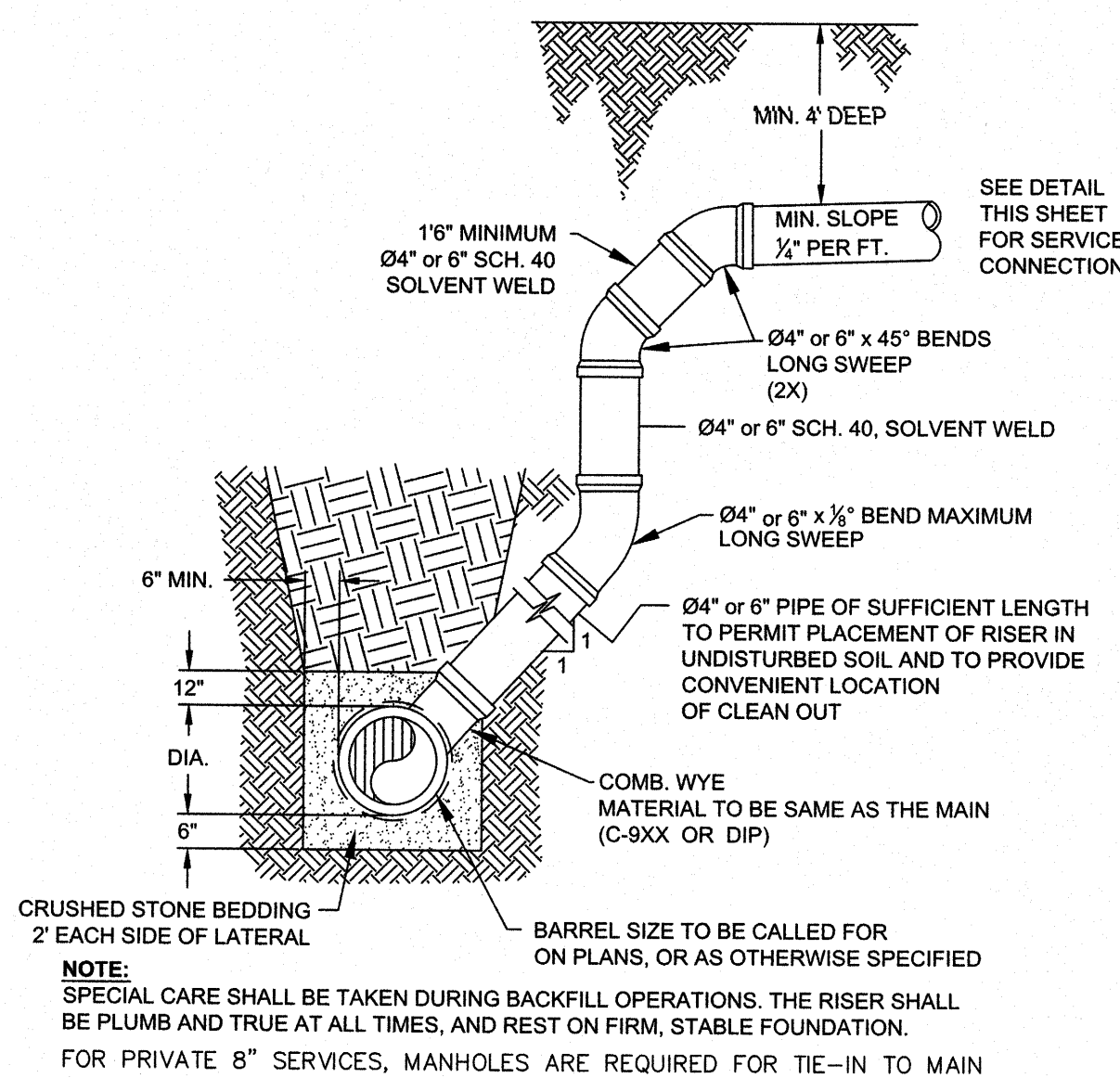
D-01





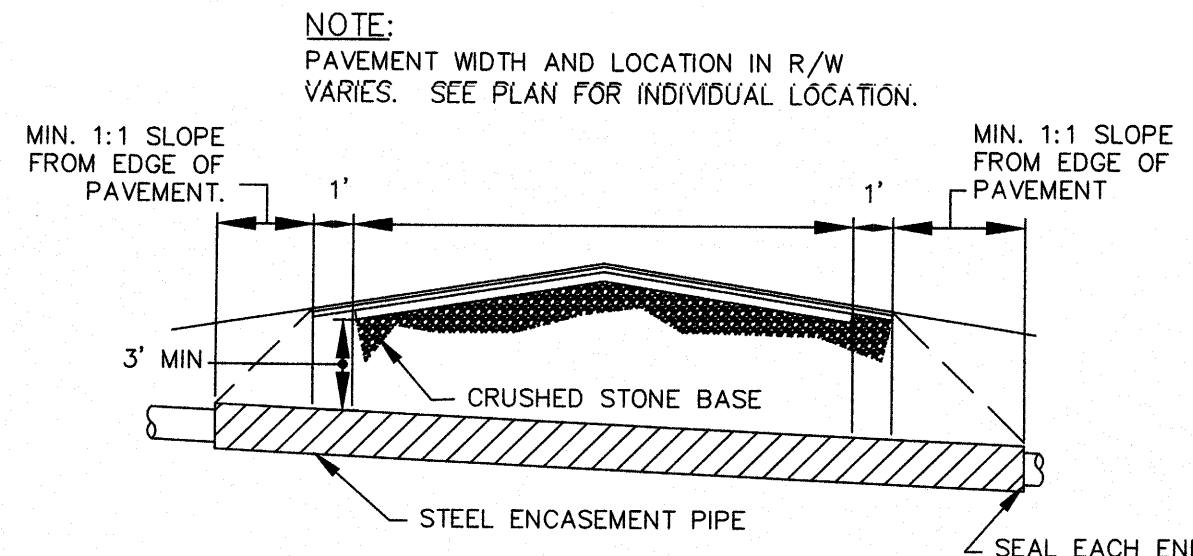
**STANDARD SERVICE CONNECTION TO SANITARY SEWER**

NOT TO SCALE



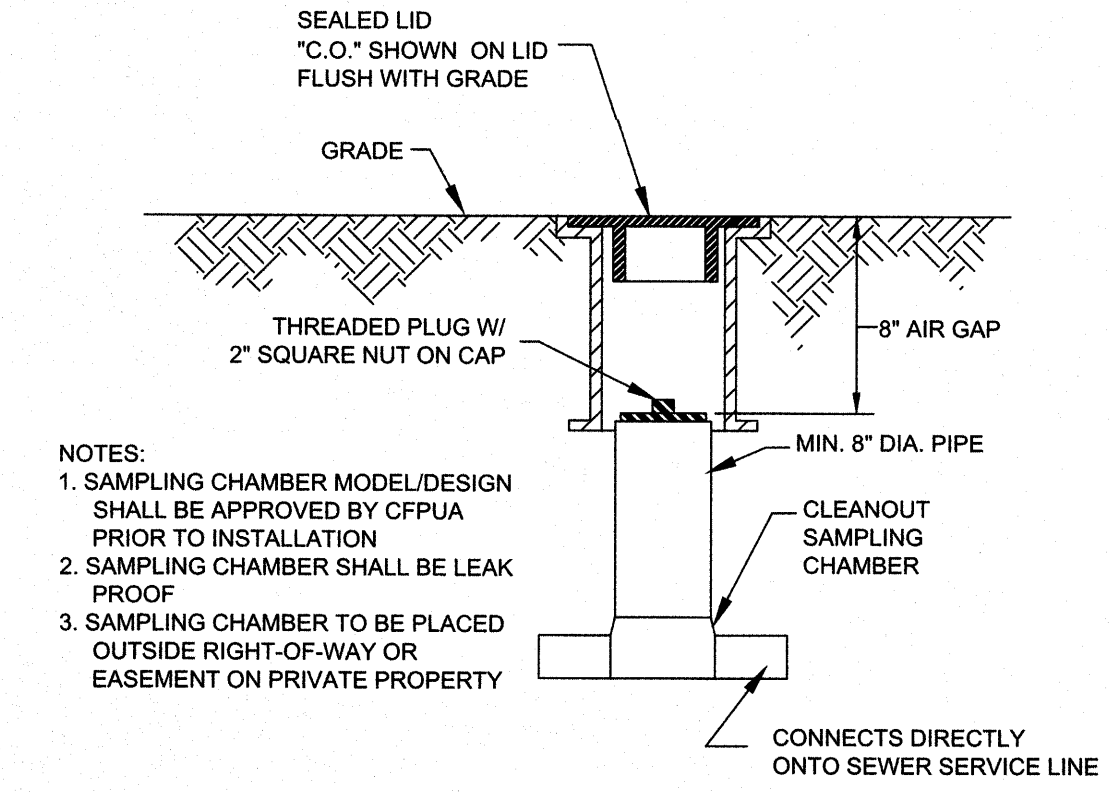
**DEEP SERVICE LATERAL (MAIN DEPTH GREATER THAN 8ft)**

NOT TO SCALE



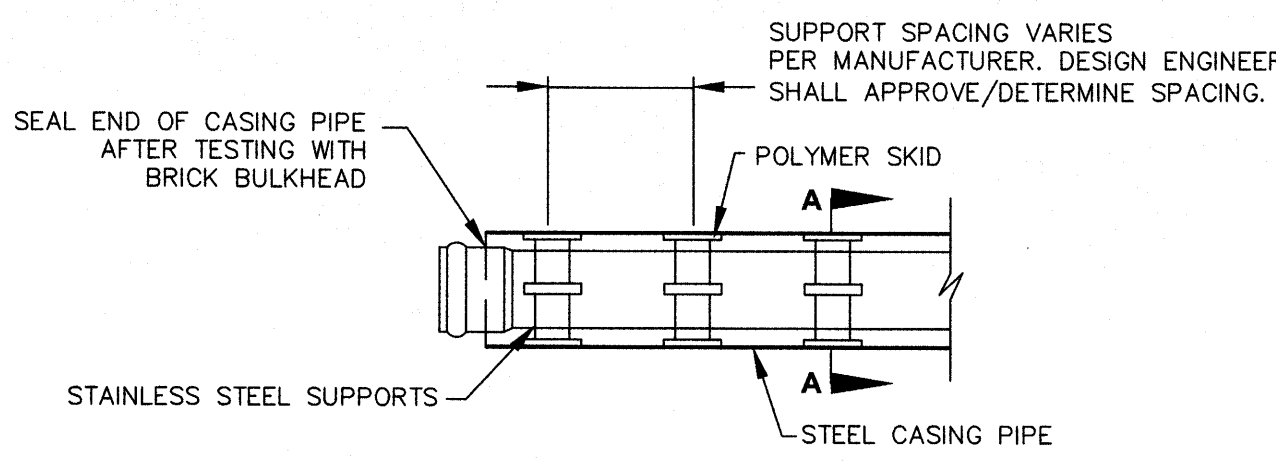
**TYPICAL BORING/JACKING DETAIL**

NOT TO SCALE



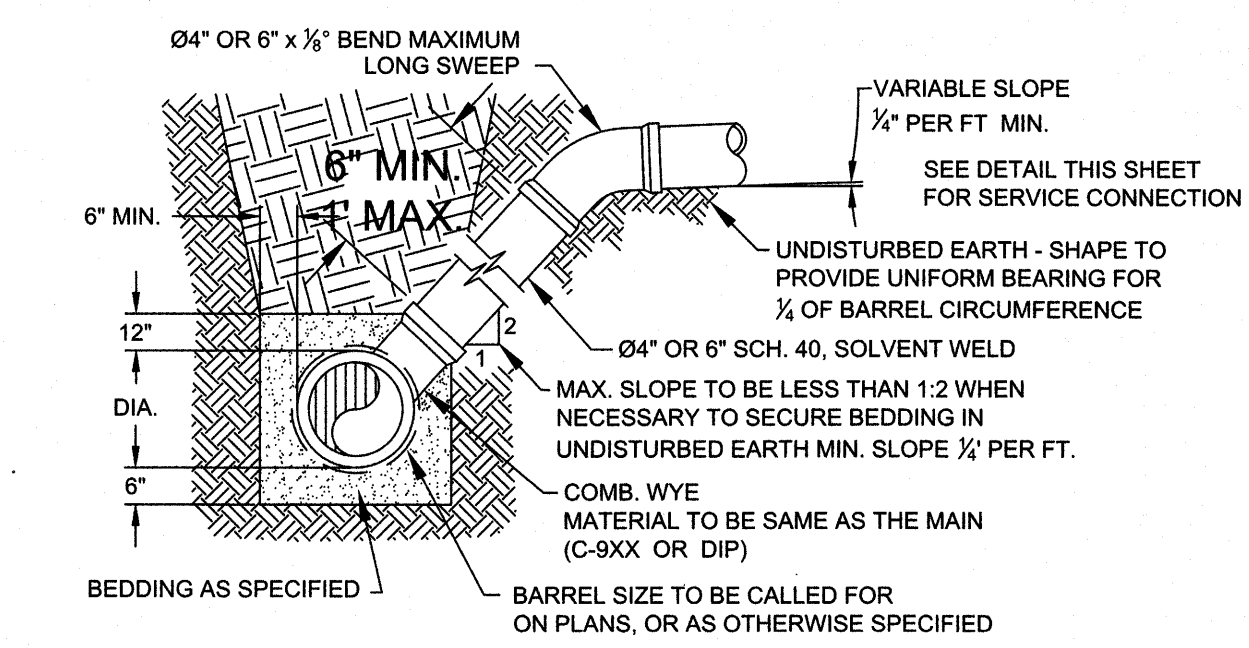
**SAMPLING CHAMBER**

NOT TO SCALE



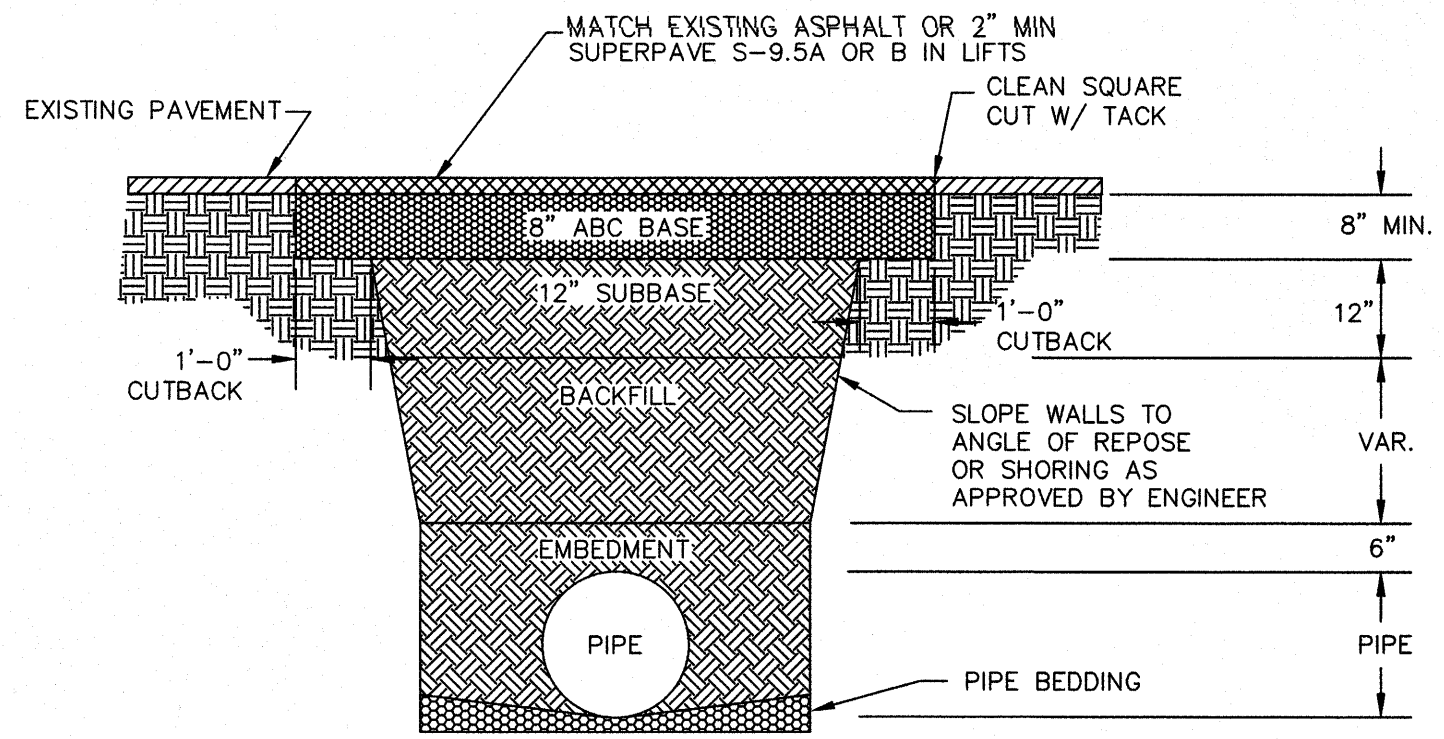
**PIPE CASING SUPPORT DETAIL**

NOT TO SCALE



**STANDARD SERVICE LATERAL (MAIN DEPTH LESS THAN 8ft)**

NOT TO SCALE

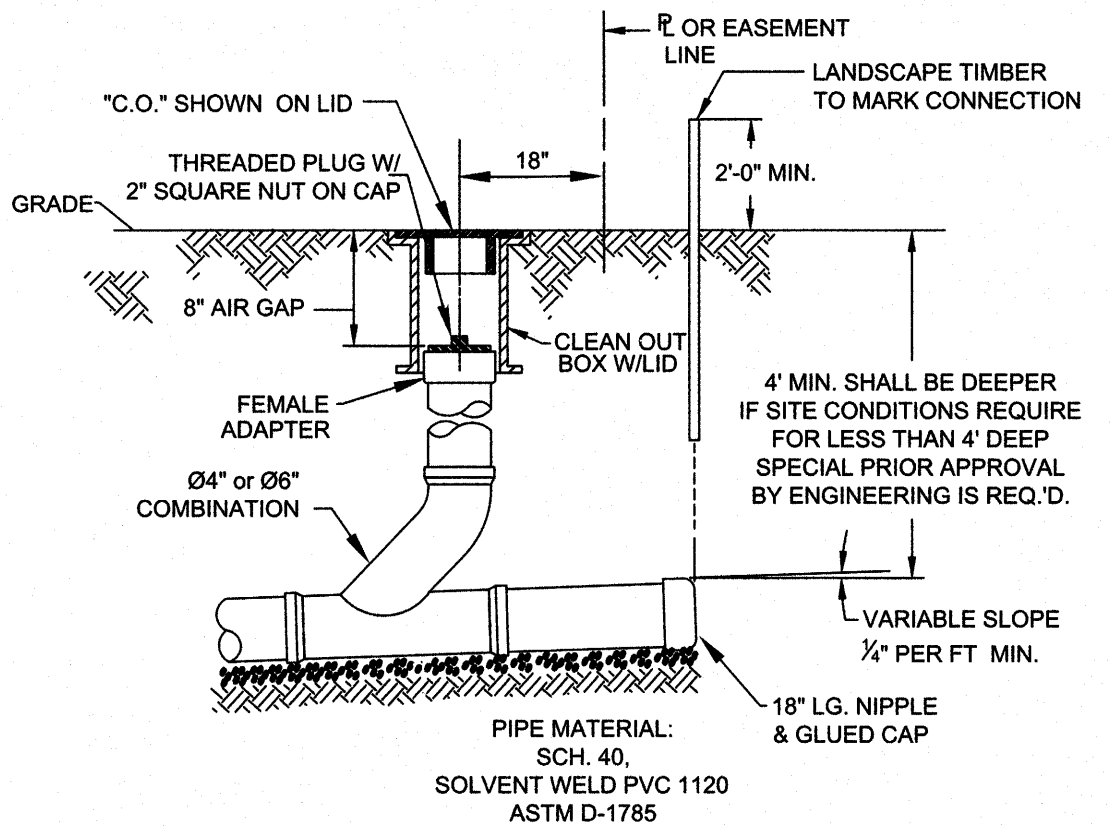


- NOTES:  
1. BACKFILL SHALL BE SUITABLE MATERIAL THAT IS FREE FROM HEAVY CLAY, GUMBOS, DEBRIS, ORGANICS AND LITTLE TO NO EXCESSIVE MOISTURE.  
2. SELECT BACKFILL MAY BE SUBSTITUTED OR REQUIRED BY CITY TO ACHIEVE COMPACTION, (I.E. #57, ABC, CRUSHED LIMESTONE, CLEAN SAND, FLOWABLE FILL, ETC).  
3. 8-INCH OF ABC BASE MATERIAL SHALL BE USED ON CITY STREETS.  
4. BACKFILL AND BASE MATERIALS SHALL BE COMPACTED 12" MINIMUM LIFTS  
5. SOIL SHALL BE COMPACTED BY A MECHANIZED TAMPER (I.E. JUMPING JACK). HOWEVER, VIBRATORY ROLLERS > 18" WIDTH MAY BE USED FOR LARGER EXCAVATIONS. THE PLATE TAMP METHOD SHALL NOT BE USED.  
6. ALL APPROVED CASTINGS SHALL BE SET FLUSH TO GRADE AND SUPPORTED IF APPLICABLE.  
7. ABC BASE AND SUBBASE COMPACTED TO 98% AND BACKFILL AND EMBEDMENT COMPACTED TO 90% AS DETERMINED BY THE MODIFIED PROCTOR AASHTO METHOD 1-99.  
8. 1-FOOT CUTBACKS OF ASPHALT SHALL BE PREPARED ON UNDISTURBED SOIL. MINIMUM ASPHALT DENSITY IS 90%.

**PAVEMENT REPAIR WHERE PIPE INSTALLED**

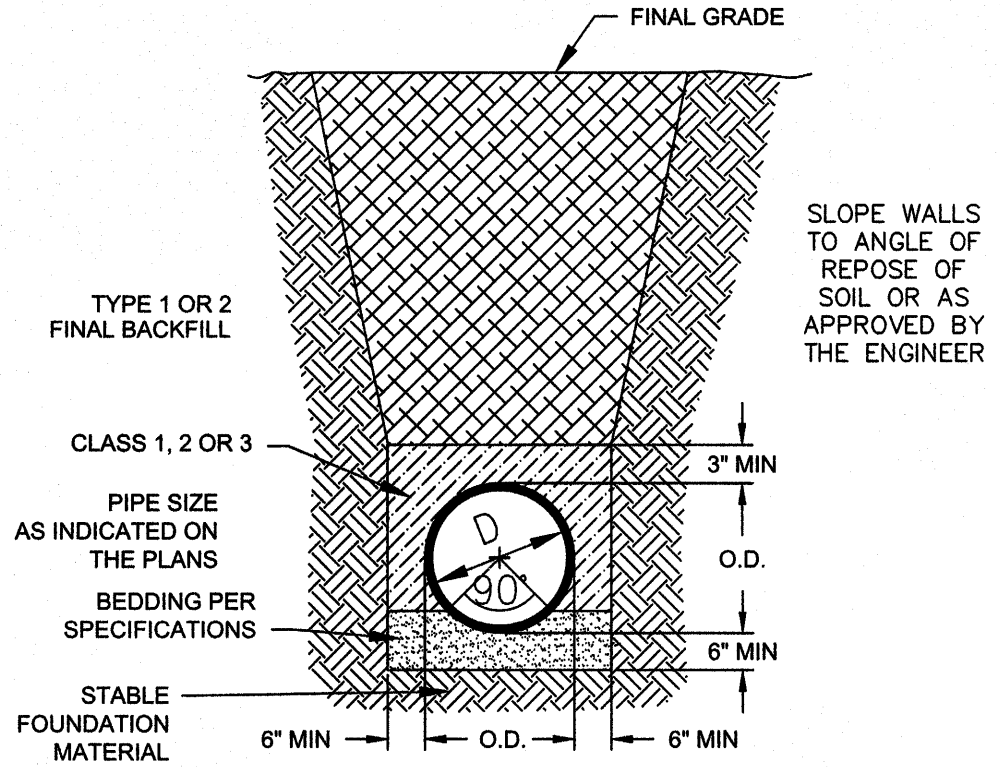
(FOR PRIVATE ROADS AND PAVED AREAS; CONTRACTOR TO MEET MIN. REQUIREMENTS AS DEFINED BY RIGHT-OF-WAY OWNER FOR PUBLIC ROAD REPAIRS)

NOT TO SCALE



**SERVICE CONNECTION & CLEAN-OUT**

NOT TO SCALE



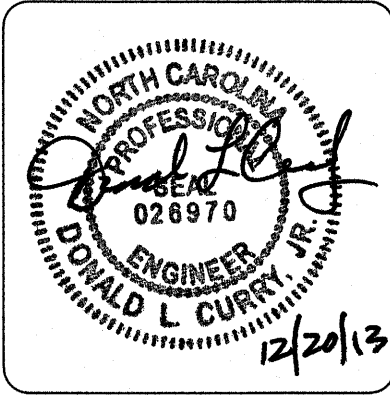
**CL 50 DUCTILE IRON DR 18 PVC PIPE TRENCH DETAIL**

NOT TO SCALE

- GENERAL NOTES:**  
1. NO EXCAVATED MATERIAL SHALL BE PLACED IN ANY STREAM, DITCH OR DRAINAGE-WAY.  
2. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES BEFORE ANY CONSTRUCTION BEGINS.  
3. THE CONTRACTOR IS RESPONSIBLE FOR TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES WHILE CONSTRUCTION IS IN PROGRESS.  
4. THE CONTRACTOR IS RESPONSIBLE FOR STABILIZATION OF ALL DISTURBED AREAS.  
5. THE CONTRACTOR IS RESPONSIBLE FOR LAY DOWN & STOCKPILE AREAS (TO ARRANGE AND INSURE COMPLIANCE WITH ALL LOCAL AND STATE REGULATIONS).

**THE DETAILS SHOWN HEREON SUPERCEDE CFPWA WRITTEN TECHNICAL SPECIFICATIONS VERSIONS 1.00 - 1.04**

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**SANITARY SEWER STANDARD DETAILS**

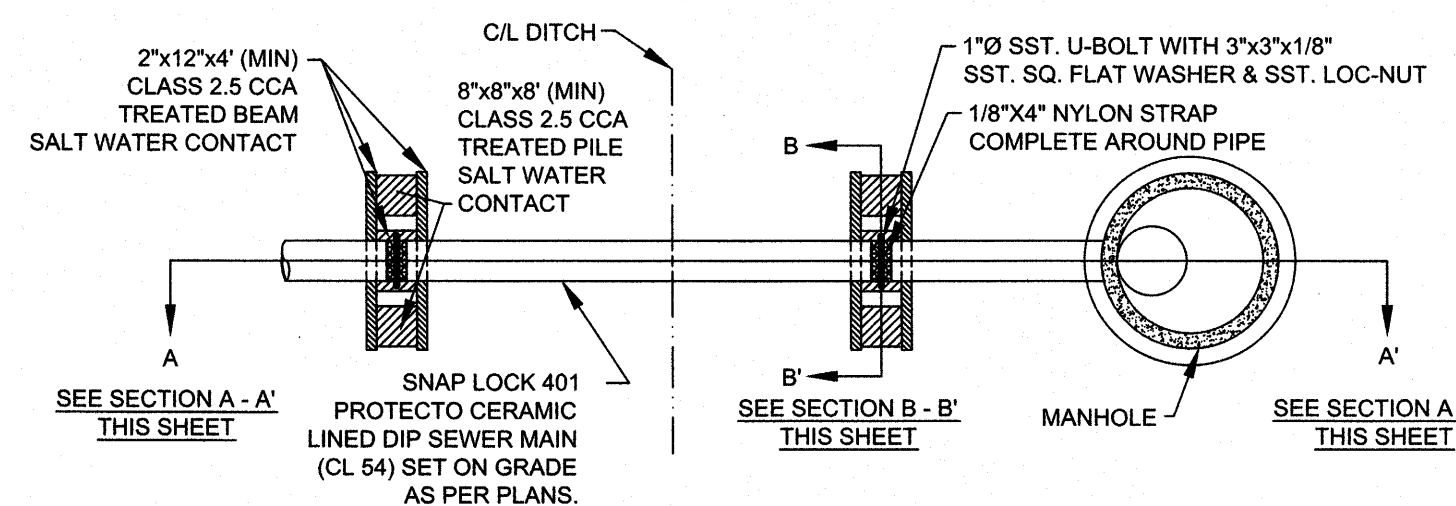
**SANITARY SEWER STANDARD DETAILS SS-2**

CAPE FEAR PUBLIC UTILITY AUTHORITY  
235 GOVERNMENT CENTER DRIVE  
WILMINGTON, NC 28403  
OFFICE: (910)332-6560

DATE: 1/9/12  
SCALE: N/A  
DRAWN BY: CFPWA  
CHECKED BY: CFPWA  
PROJECT NO.:

SHEET NO: 2/4



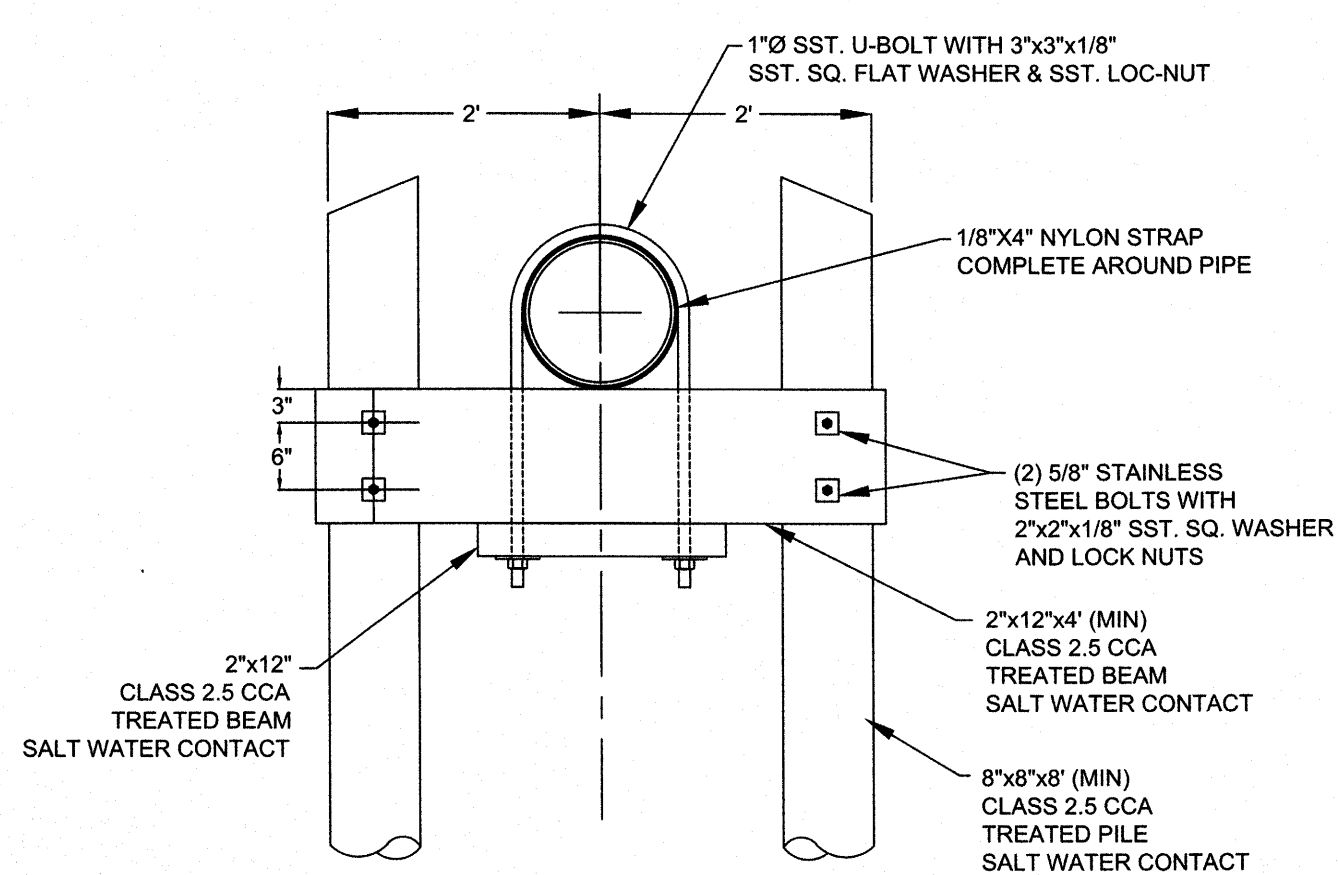


#### NOTES:

- (1) PILES AND PILE DRIVING SHALL CONFORM TO NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES, JANUARY 2002, SECTIONS 445, 450, 1082-2 & 1084-2
- (2) CENTERLINE OF BOLTS TO BE A MINIMUM OF 3" FROM OUTSIDE EDGE OF TIMBER. BOLTS TO BE A MINIMUM OF 3" CENTERLINE TO CENTERLINE
- (3) ALL STAINLESS STEEL SHALL BE 316. STAINLESS STRAP TO BE COLD FORMED.
- (4) PILE SHALL NOT OBSTRUCT FLOW OR CAUSE EROSION OF DITCH/STREAM BANK.
- (5) MIN. CLASS 54 DIP-ENGINEER MUST DESIGN LOADING.
- (6) DESIGN SHALL BE APPROVED BY CFPUA

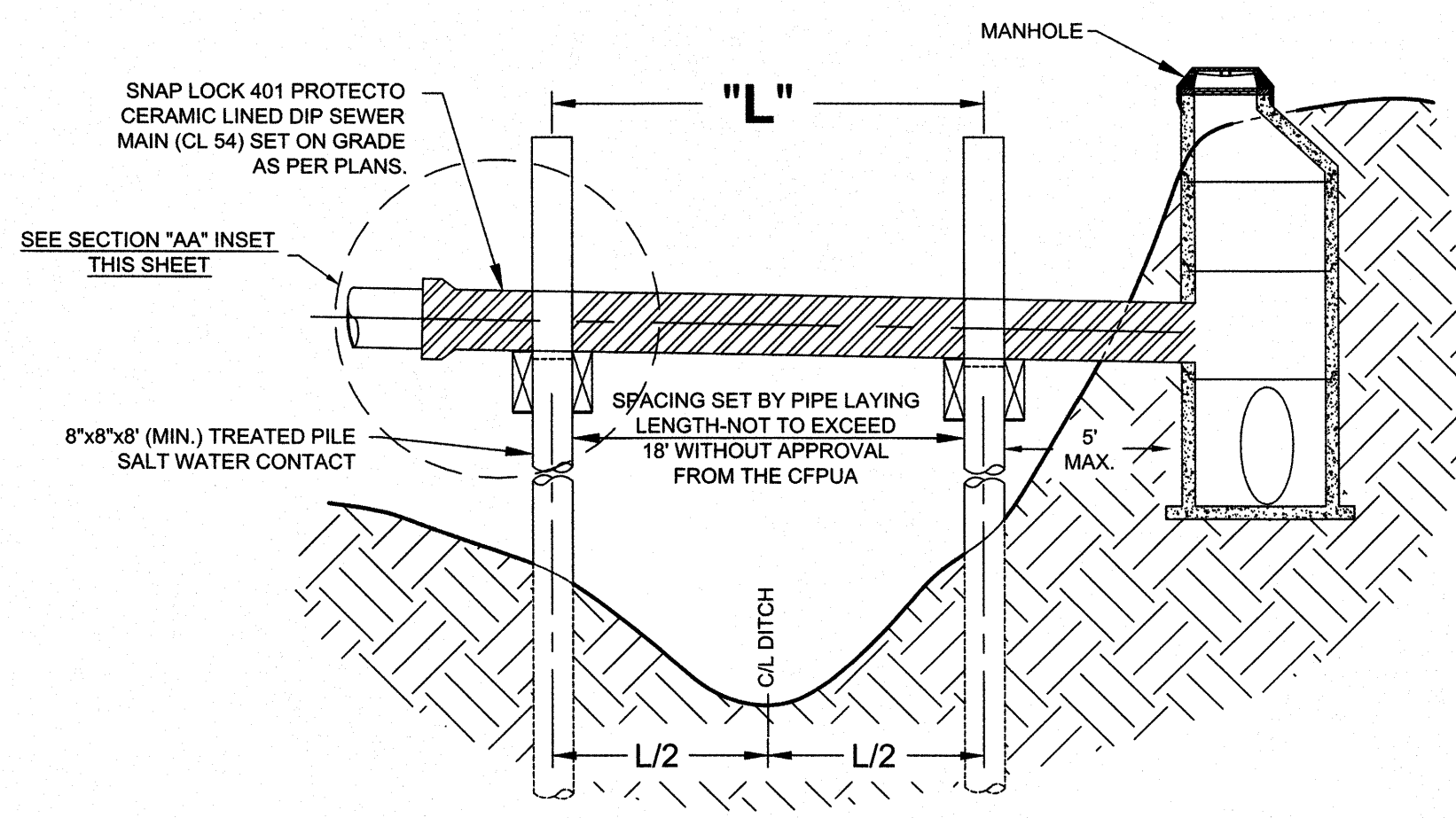
#### PILE AND BENT

NOT TO SCALE



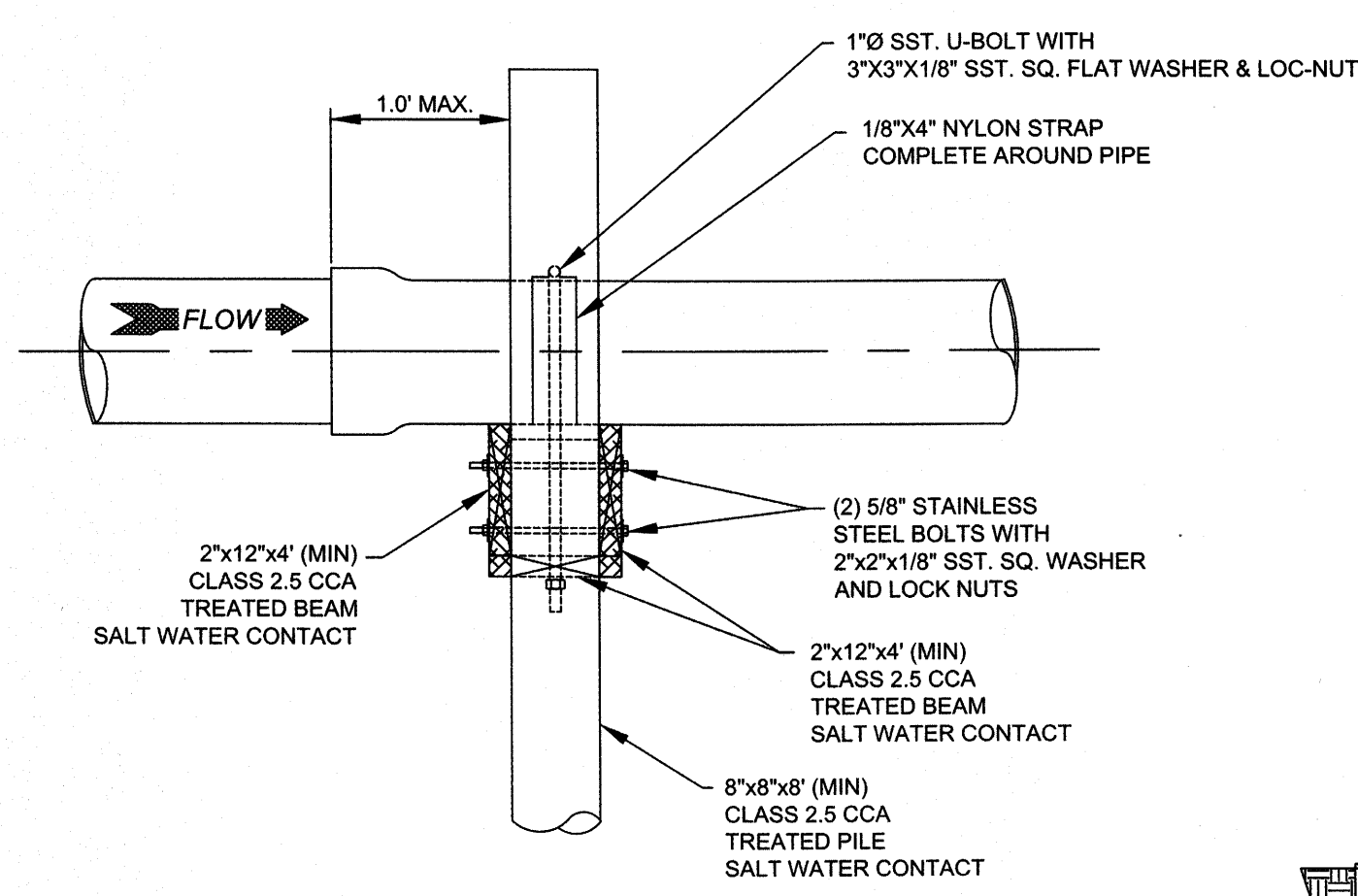
#### PILE AND BENT SECTION B - B'

NOT TO SCALE



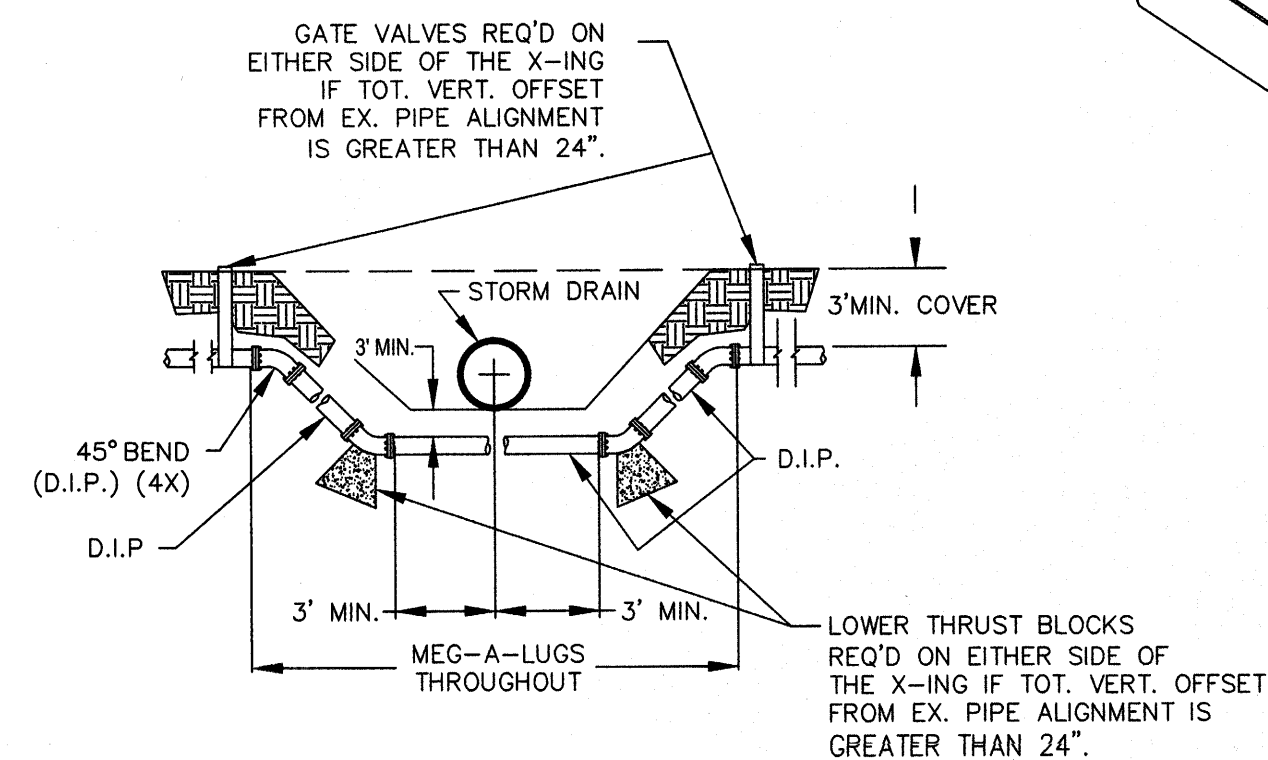
#### PILE AND BENT SECTION A - A' INSET

NOT TO SCALE



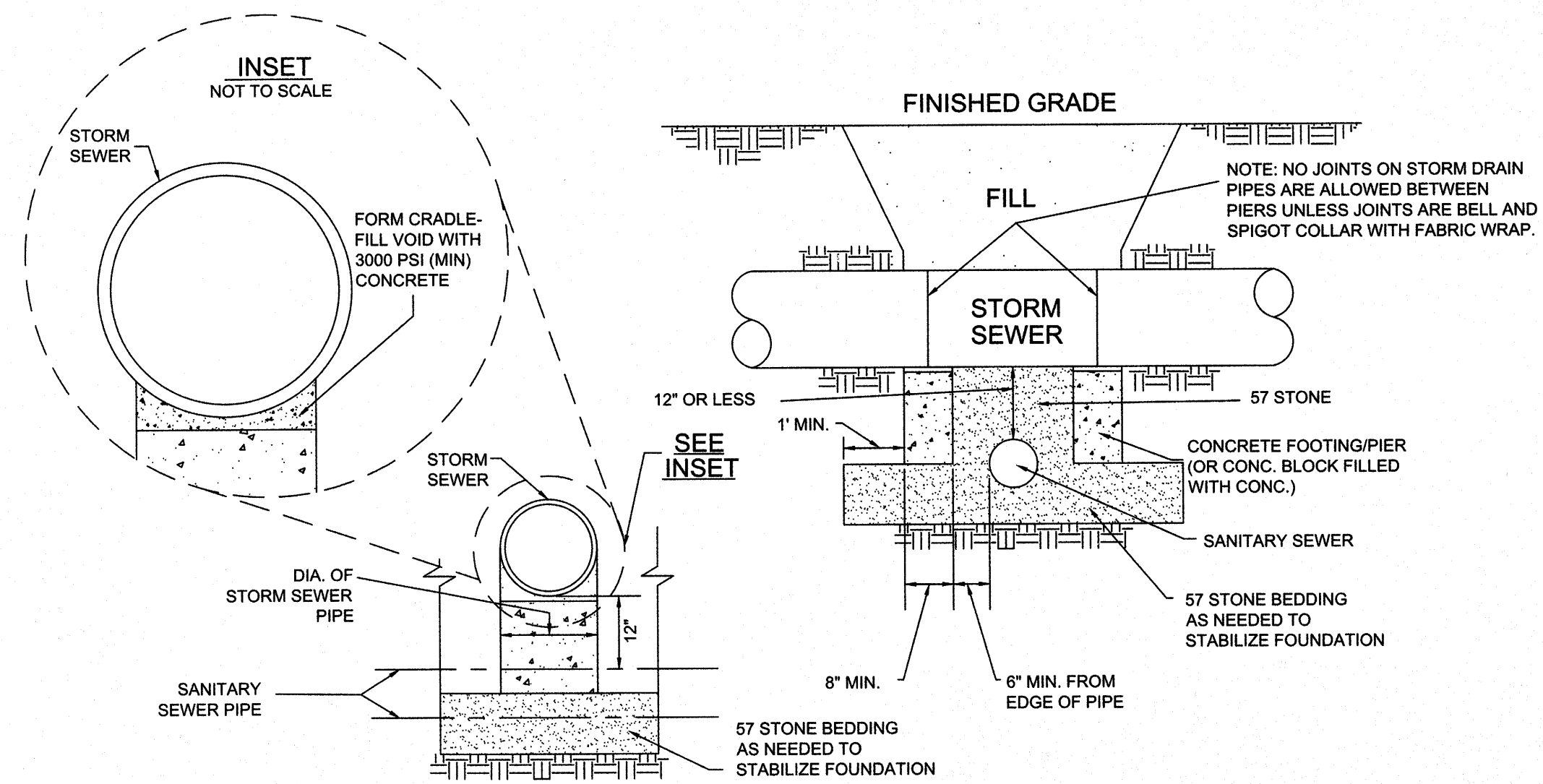
#### PILE AND BENT SECTION A - A' INSET

NOT TO SCALE



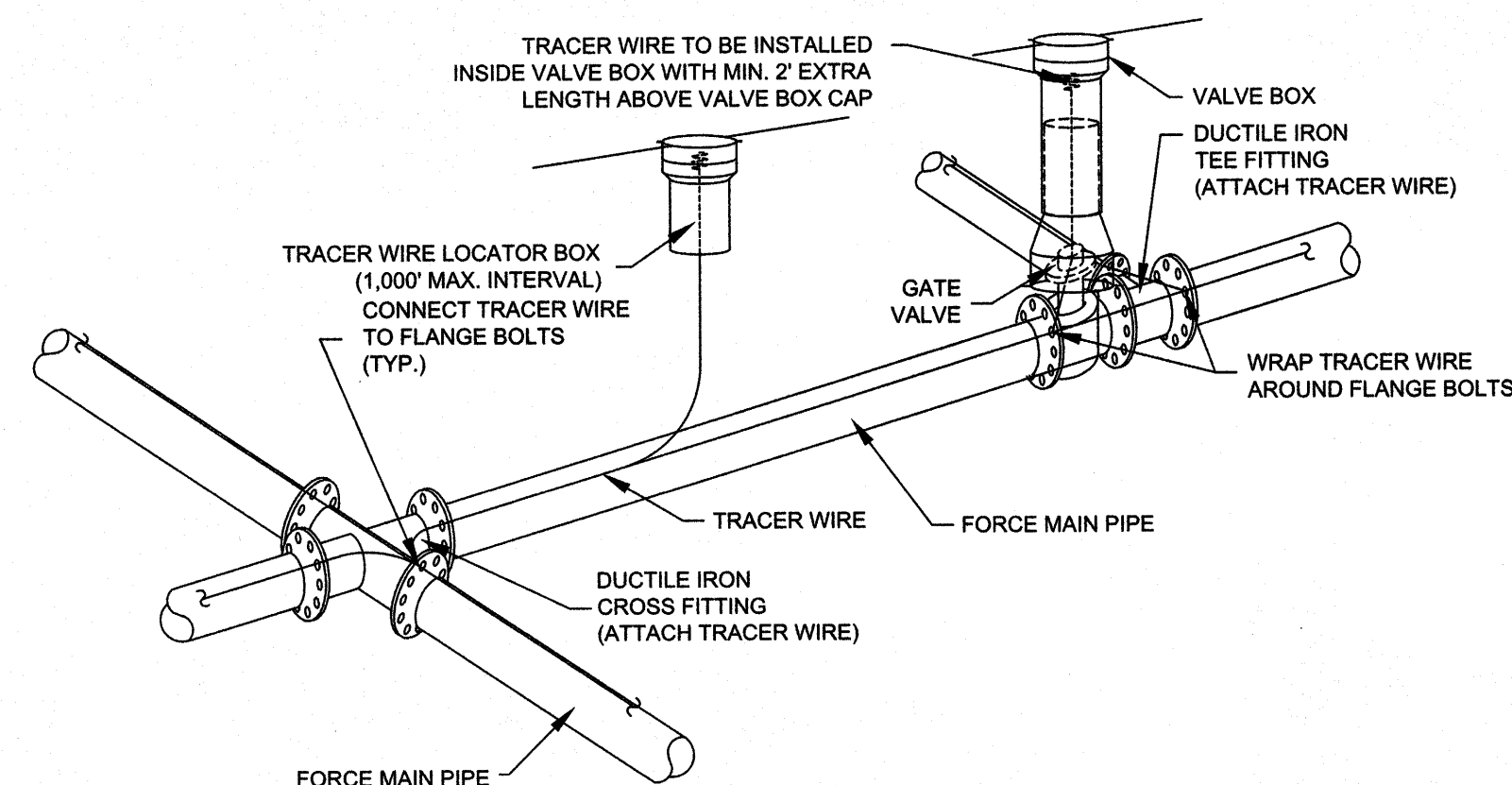
#### FORCE MAIN DITCH & STORM DRAIN CROSSING

NOT TO SCALE



#### STRUCTURAL BRIDGING DETAIL FOR STORMWATER OVER GRAVITY SEWER INSTALLATIONS WITH LESS THAN 12" SEPARATION

NOT TO SCALE



#### TRACER WIRE DETAIL

NOT TO SCALE

#### GENERAL NOTES:

1. NO EXCAVATED MATERIAL SHALL BE PLACED IN ANY STREAM, DITCH OR DRAINAGE-WAY.
2. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES BEFORE ANY CONSTRUCTION BEGINS.
3. THE CONTRACTOR IS RESPONSIBLE FOR TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES WHILE CONSTRUCTION IS IN PROGRESS.
4. THE CONTRACTOR IS RESPONSIBLE FOR STABILIZATION OF ALL DISTURBED AREAS.
5. THE CONTRACTOR IS RESPONSIBLE FOR LAY DOWN & STOCKPILE AREAS (TO ARRANGE AND INSURE COMPLIANCE WITH ALL LOCAL AND STATE REGULATIONS).

#### THE DETAILS SHOWN HEREON SUPERCEDE CFPUA WRITTEN TECHNICAL SPECIFICATIONS VERSIONS 1.00 - 1.04

#### SANITARY SEWER STANDARD DETAILS

#### SANITARY SEWER STANDARD DETAILS SS-3

CAPE FEAR PUBLIC UTILITY AUTHORITY  
235 GOVERNMENT CENTER DRIVE  
WILMINGTON, NC 28403  
OFFICE: (910)332-6560

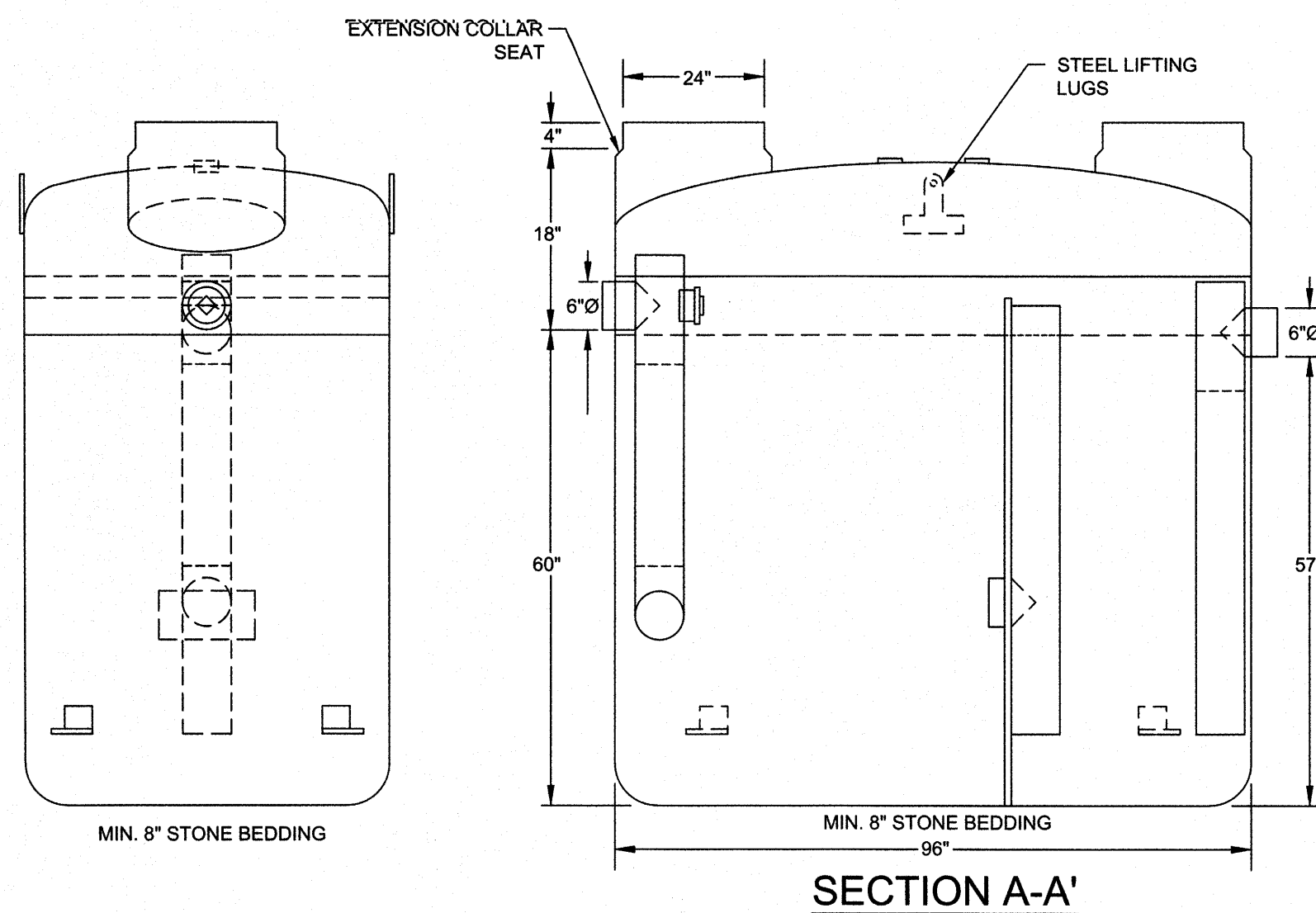
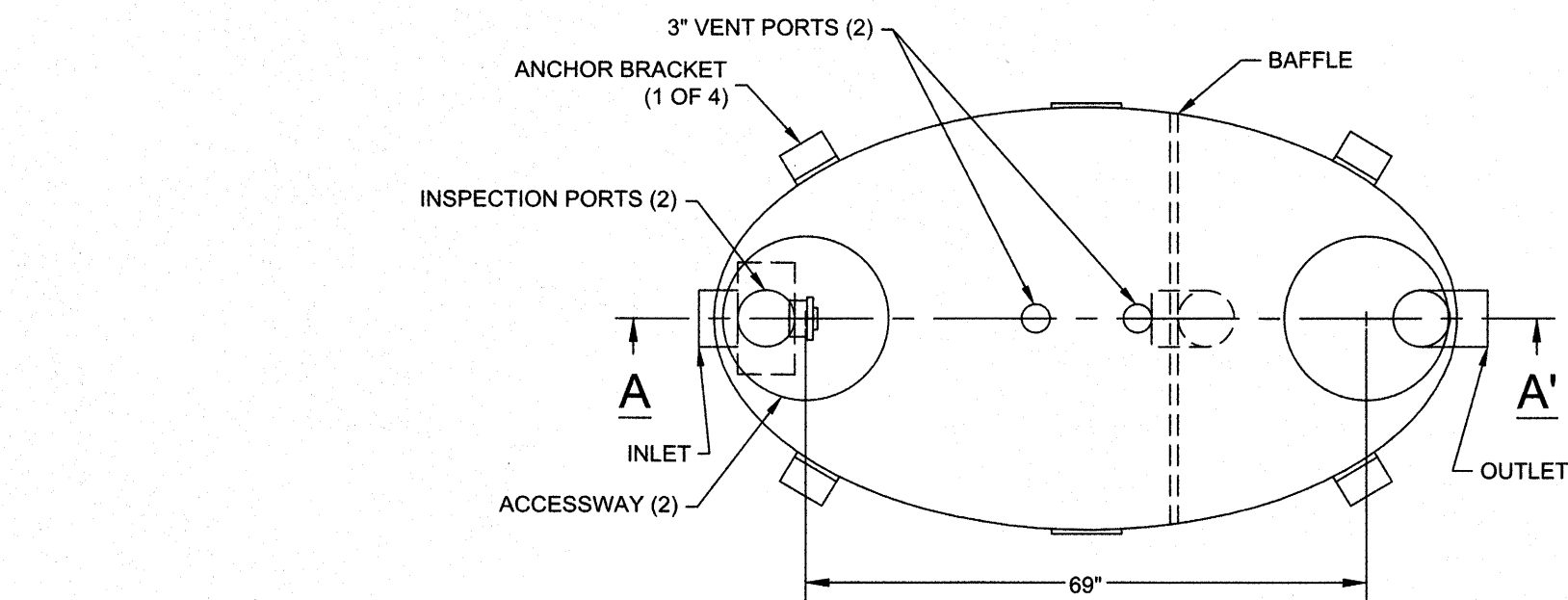


DATE: 1/9/12  
SCALE: N/A  
DRAWN BY: CFPUA  
CHECKED BY: CFPUA  
PROJECT NO.:

SHEET NO: 3/4

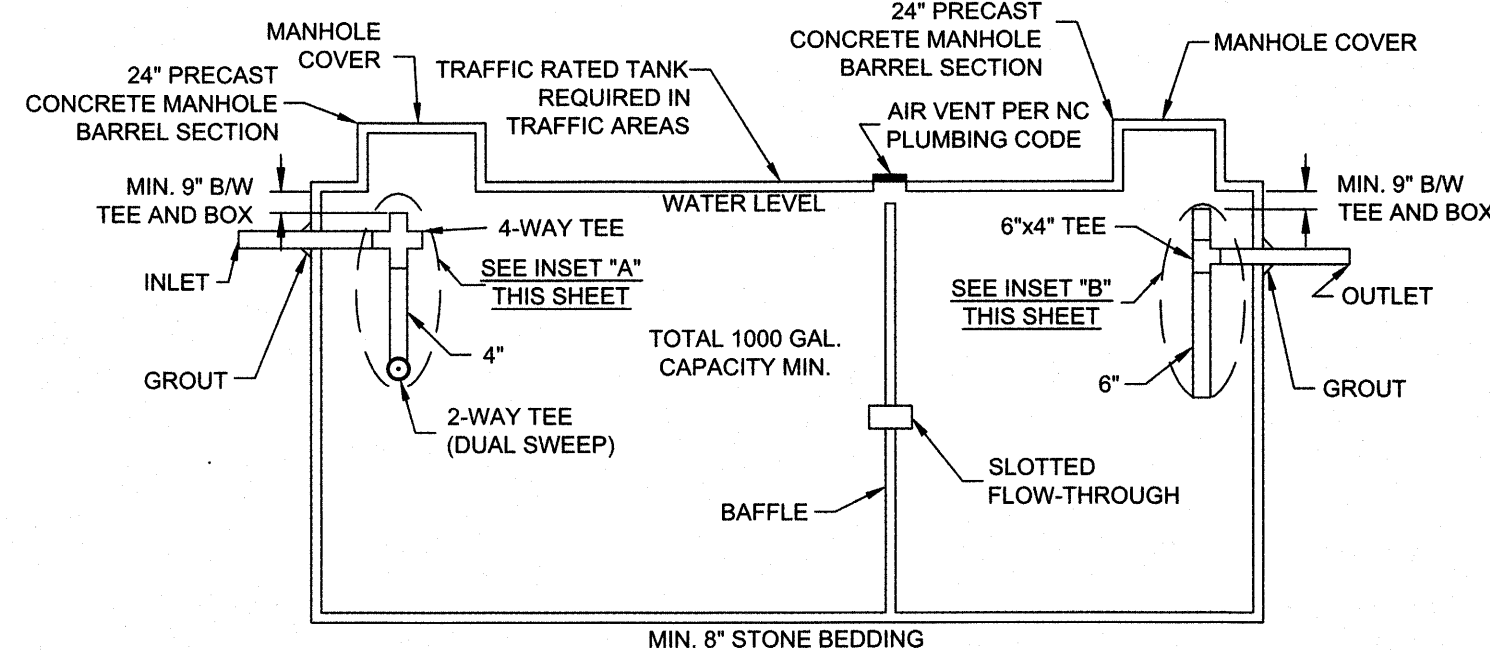
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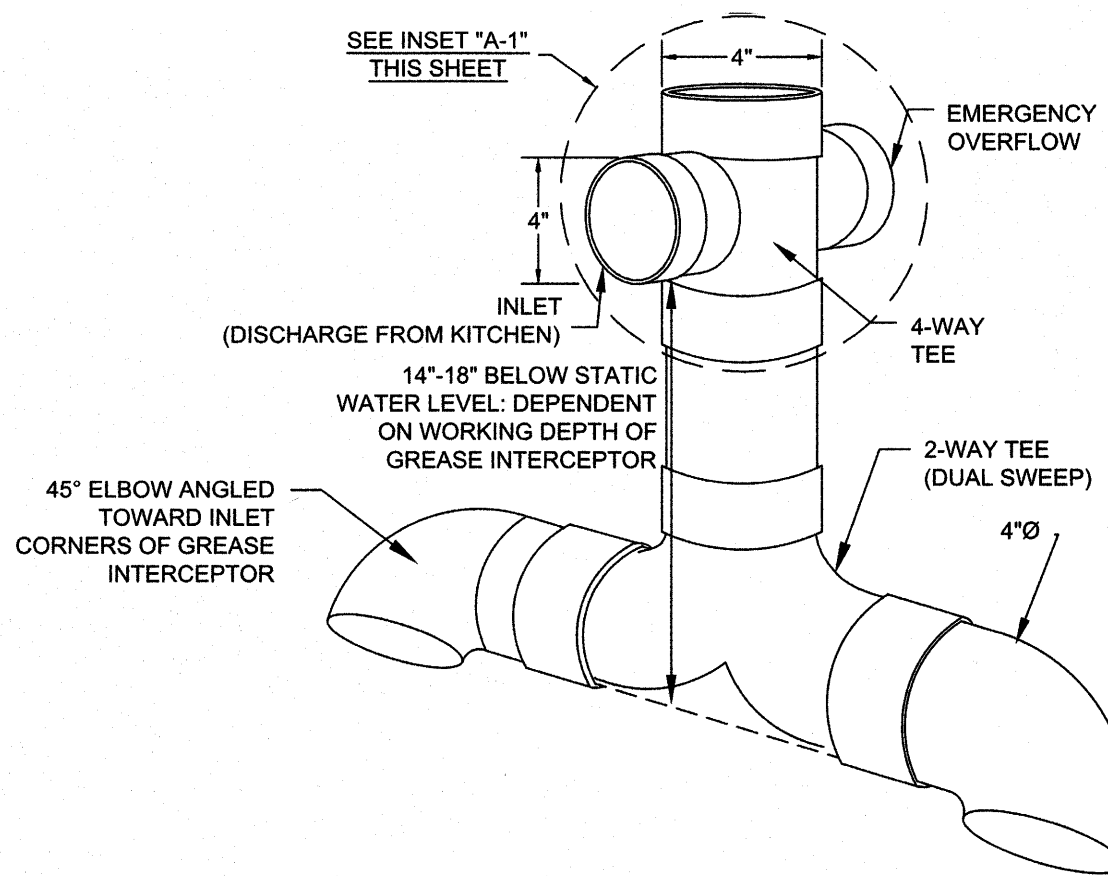


- NOTES:
1. FOR GRAVITY APPLICATIONS ONLY
  2. MIN. THICKNESS: 1/4" WALL AND 3/8" TOP AND BOTTOM BOWLS
  3. STANDARD PIPE STUBS ARE SOCKET SDR 35 PVC
  4. EXTENSION COLLARS SHALL BE CAULKED WITH SIKAFLEX OR EQUIVALENT FOR WATERTIGHT SEAL
  5. FOLLOW MANUFACTURE'S SPECS FOR TRAFFIC OR PEDESTRIAN LOADING

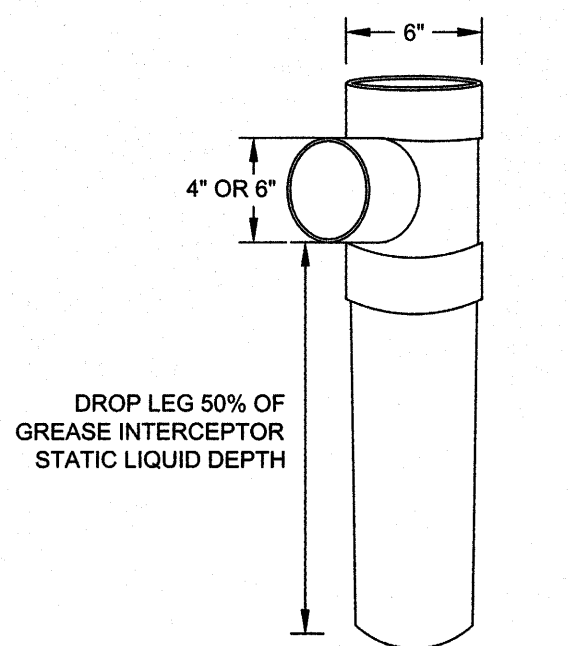
**FIBERGLASS GREASE INTERCEPTOR**  
NOT TO SCALE



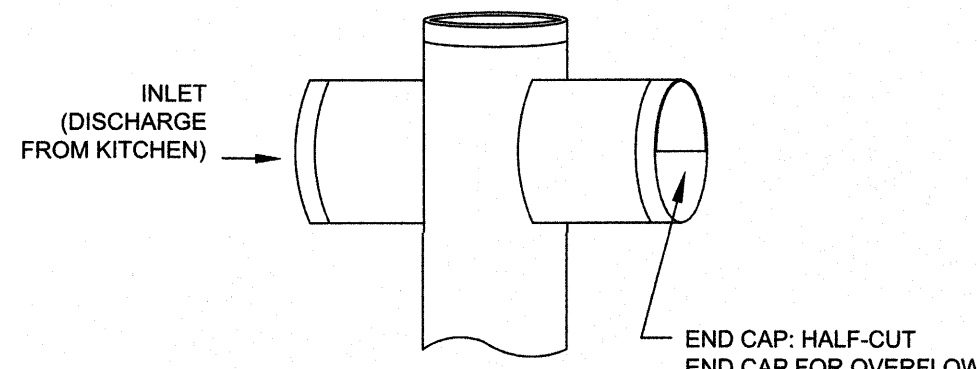
**CONCRETE GREASE INTERCEPTOR**  
NOT TO SCALE



**GREASE INTERCEPTOR  
INSET "A"  
4" SANITARY TEE**  
NOT TO SCALE

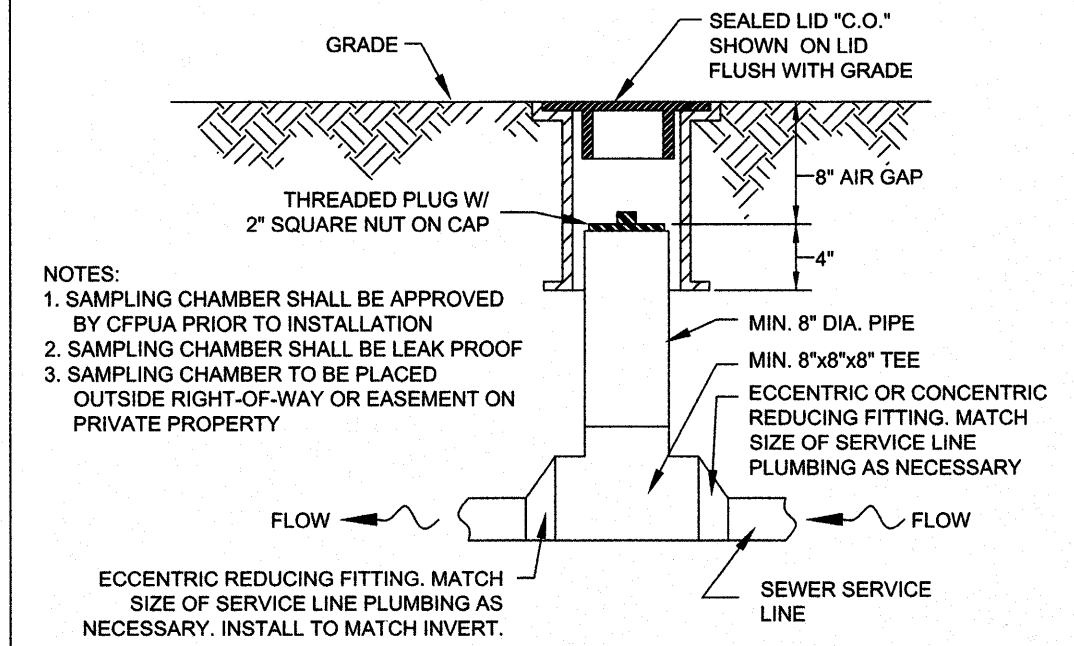


**GREASE  
INTERCEPTOR  
INSET "B"  
6" X 6" X 4" OUTLET  
SANITARY TEE**  
NOT TO SCALE



**GREASE INTERCEPTOR INSET "A-1"  
EMERGENCY OVERFLOW CLOSE-UP**  
NOT TO SCALE

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**SAMPLING CHAMBER**  
NOT TO SCALE

|   |  |
|---|--|
| <p><b>PRELIMINARY</b></p> <p><b>SEWER SAMPLING CHAMBER<br/>STANDARD DETAIL</b></p> <p><b>CAPE FEAR PUBLIC UTILITY AUTHORITY</b><br/>235 GOVERNMENT CENTER DRIVE<br/>WILMINGTON, NC 28403<br/>OFFICE: (910)332-6560</p> <p>Stewardship. Sustainability. Service.</p> | <p>DATE: 5/9/12</p> <p>SCALE: N/A</p> <p>DRAWN BY: MAT</p> <p>CHECKED BY:</p> <p>PROJECT NO.:</p> <p>SHEET NO: 1</p> |
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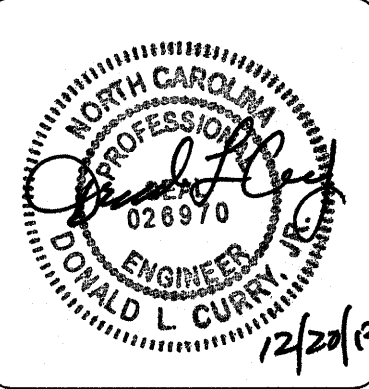
- GENERAL NOTES:**
1. NO EXCAVATED MATERIAL SHALL BE PLACED IN ANY STREAM, DITCH OR DRAINAGE-WAY.
  2. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES BEFORE ANY CONSTRUCTION BEGINS.
  3. THE CONTRACTOR IS RESPONSIBLE FOR TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES WHILE CONSTRUCTION IS IN PROGRESS.
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**THE DETAILS SHOWN HEREON SUPERCEDE CFPUA  
WRITTEN TECHNICAL SPECIFICATIONS VERSIONS 1.00 - 1.04**

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**SANITARY SEWER  
STANDARD DETAILS**

**SANITARY SEWER STANDARD DETAILS  
SS-4**



**CAPE FEAR PUBLIC UTILITY AUTHORITY**  
235 GOVERNMENT CENTER DRIVE  
WILMINGTON, NC 28403  
OFFICE: (910)332-6560

Stewardship. Sustainability. Service.

|              |        |
|--------------|--------|
| DATE:        | 1/9/12 |
| SCALE:       | N/A    |
| DRAWN BY:    | CFPUA  |
| CHECKED BY:  | CFPUA  |
| PROJECT NO.: |        |

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|           | 4 |

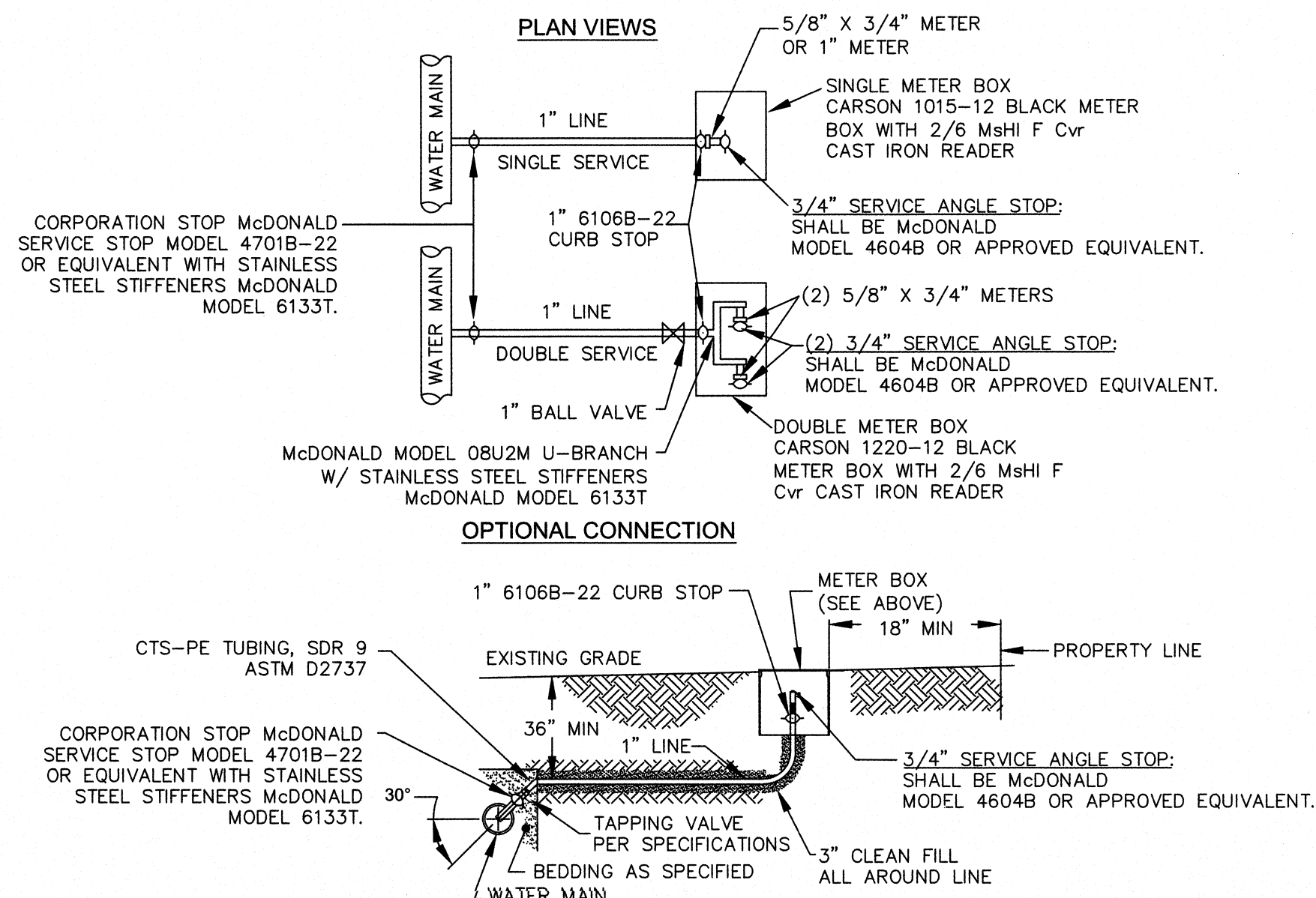
PO BOX 2013  
205 S. FLOQUAY AVE.  
FLOQUAY-VARINA, NC  
27326  
PHONE: (910) 332-6560  
FAX: (910) 332-2043  
MOBILE: (910) 880-9857  
NC LIC. NO. P-0759

**The Curry Engineering  
Group, PLLC**  
www.curryeng.com

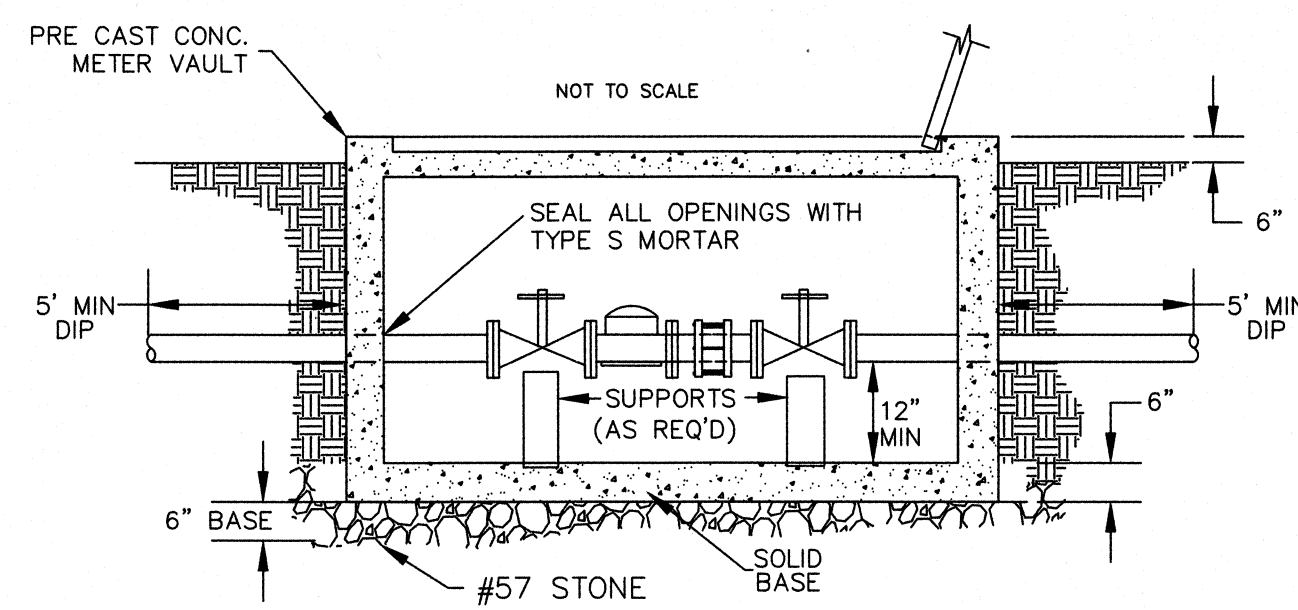
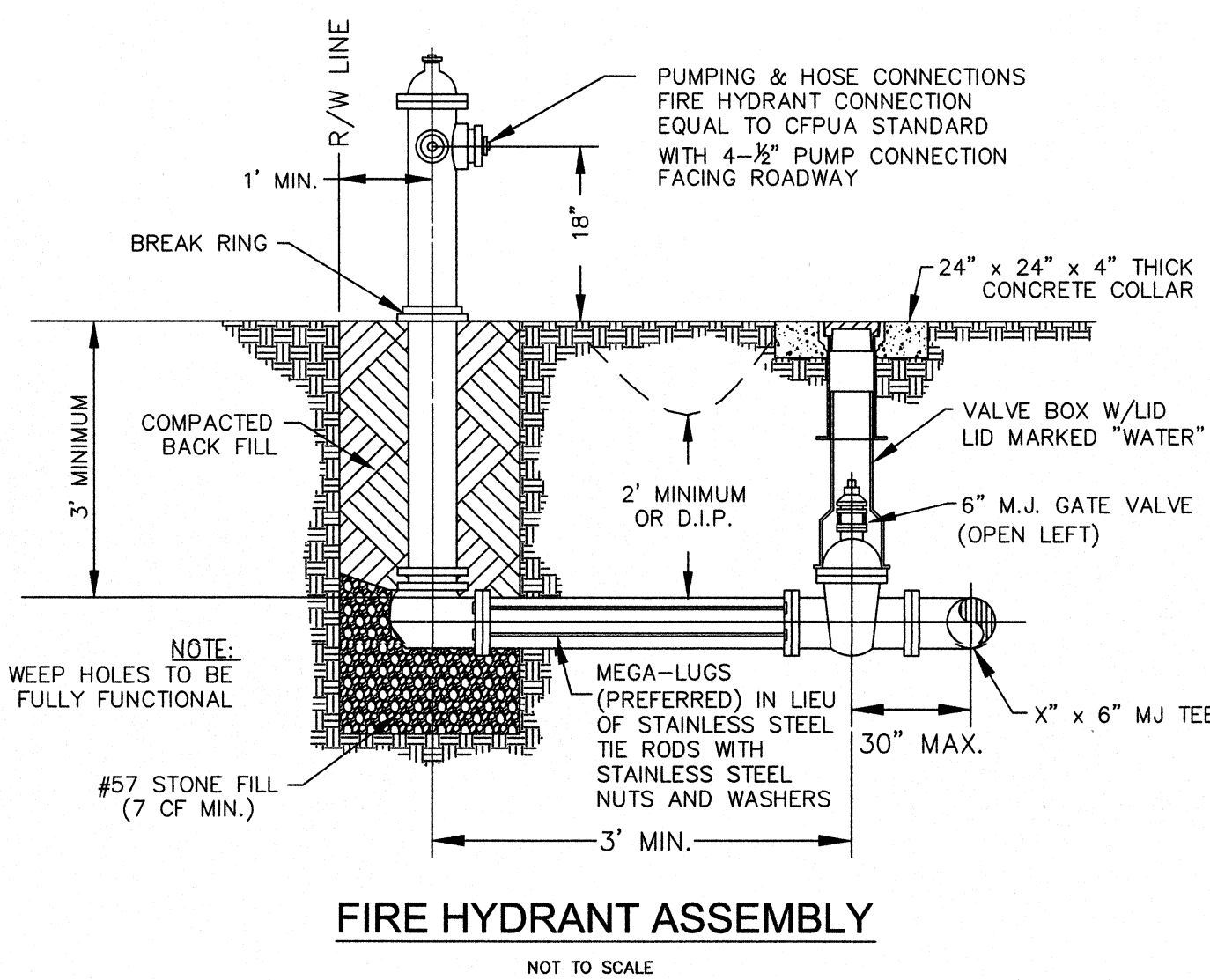
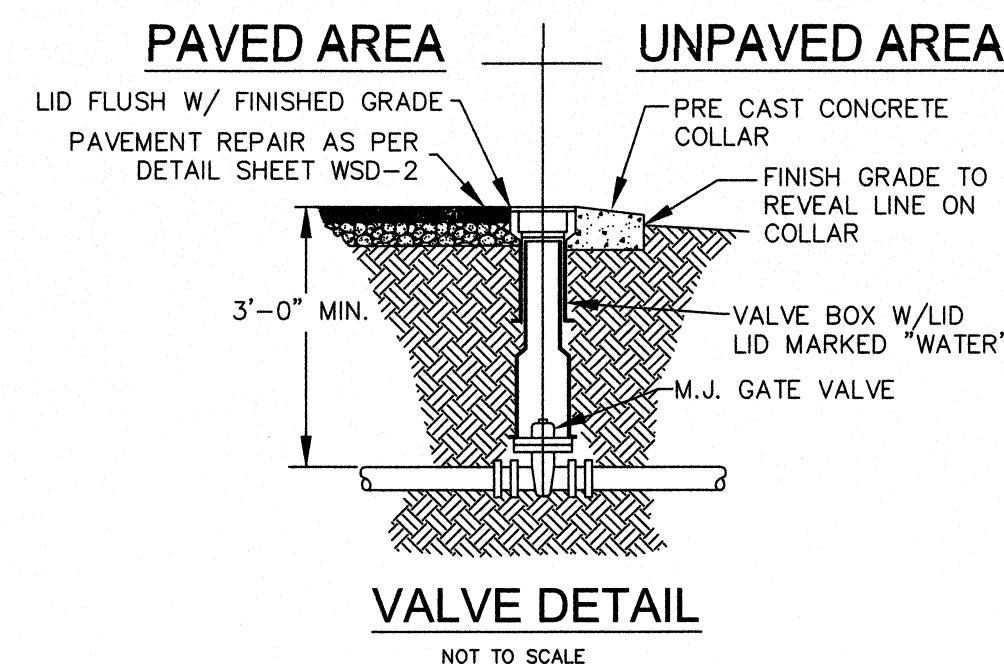
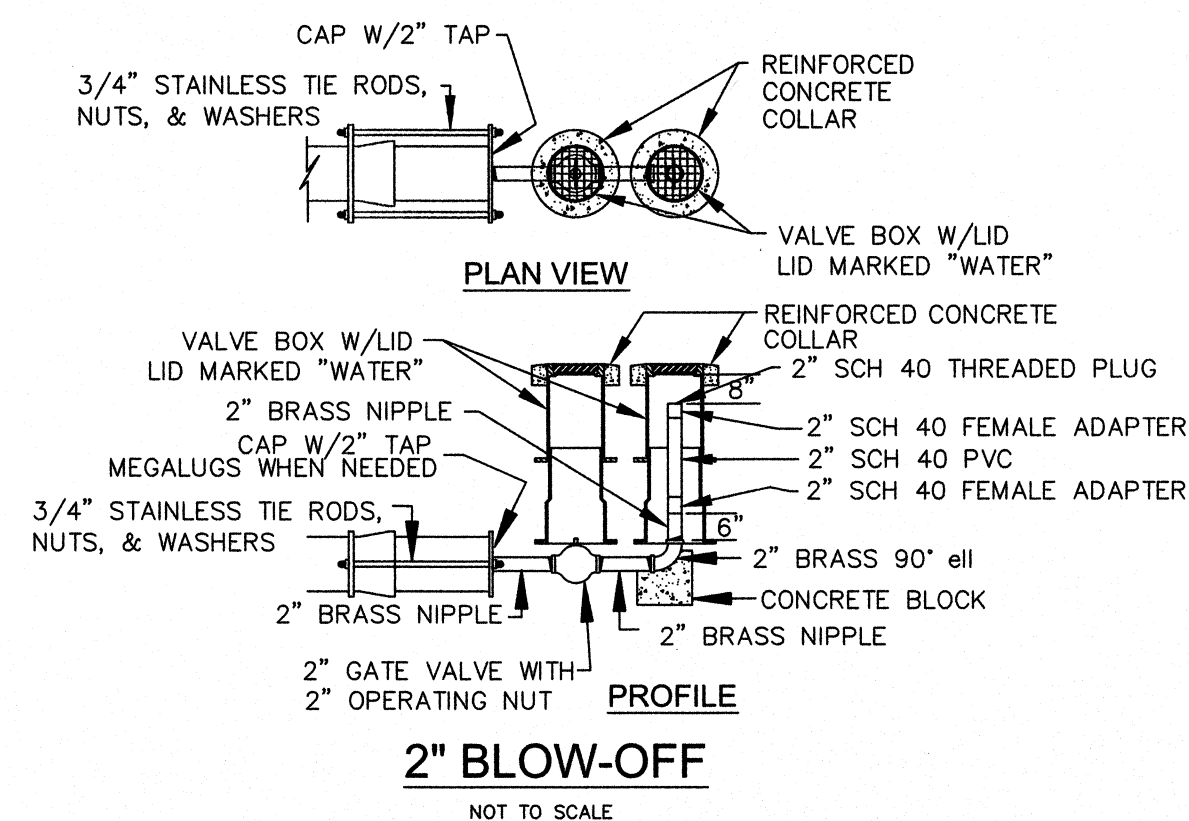
**SHOPS AT COLLEGE RD. - WILMINGTON, NC**  
**SANITARY SEWER DETAILS 4**

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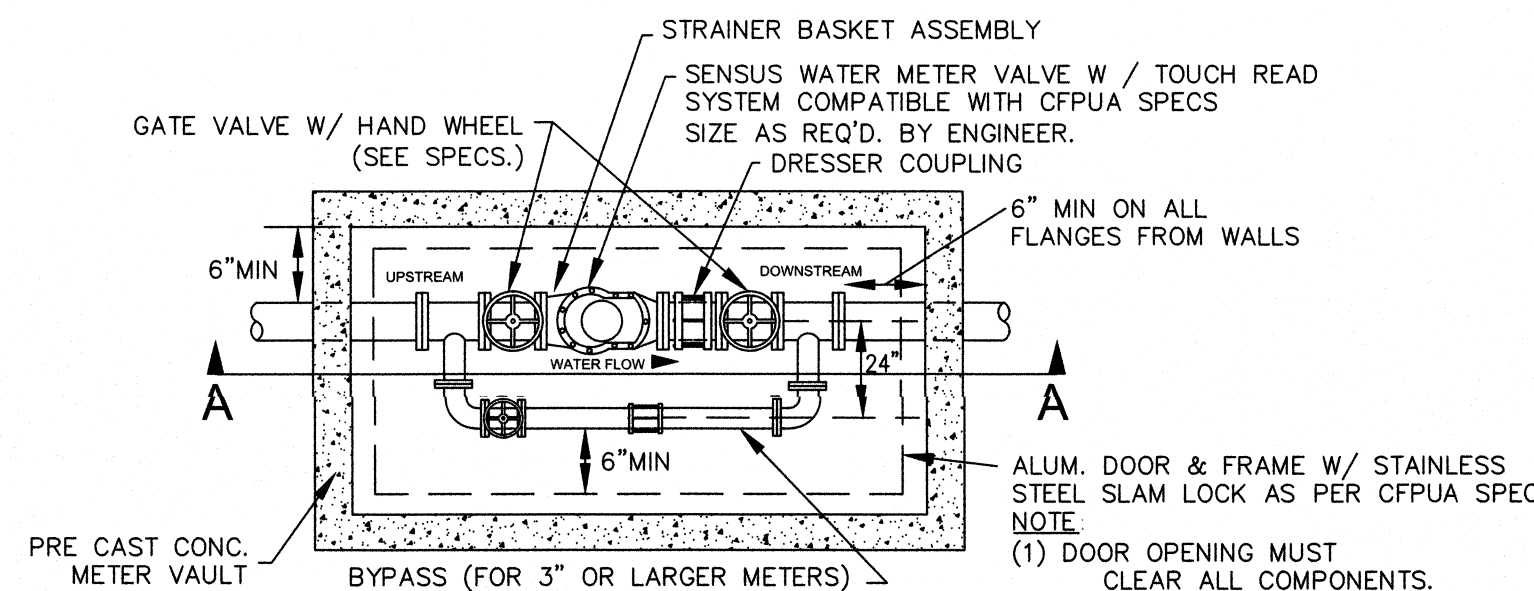




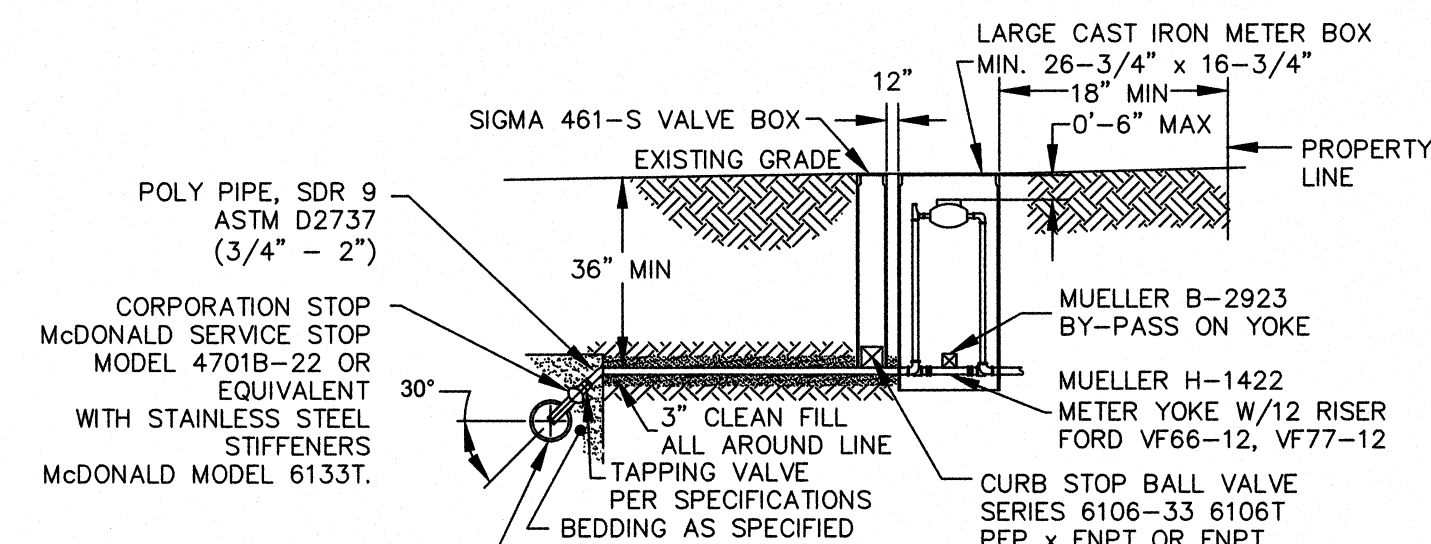
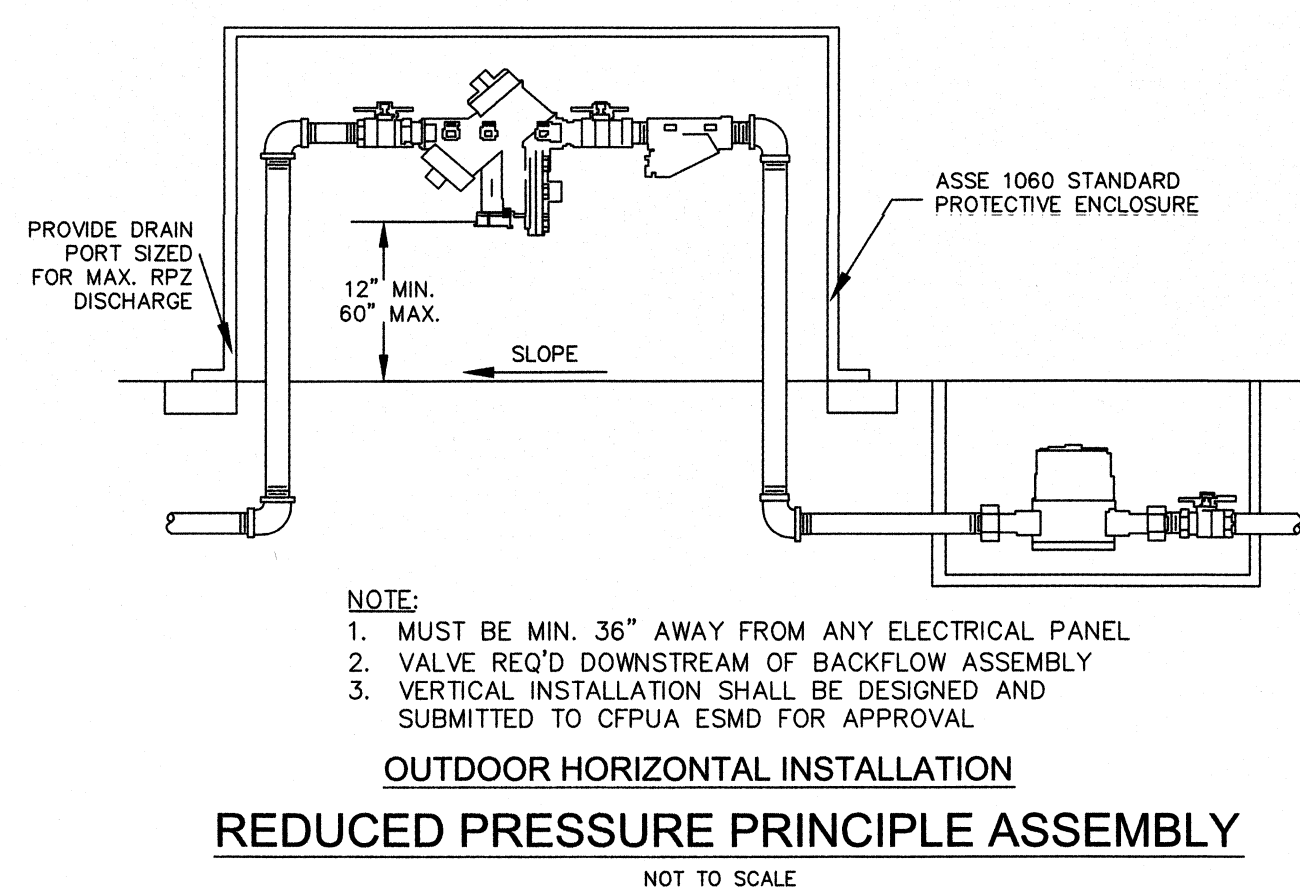
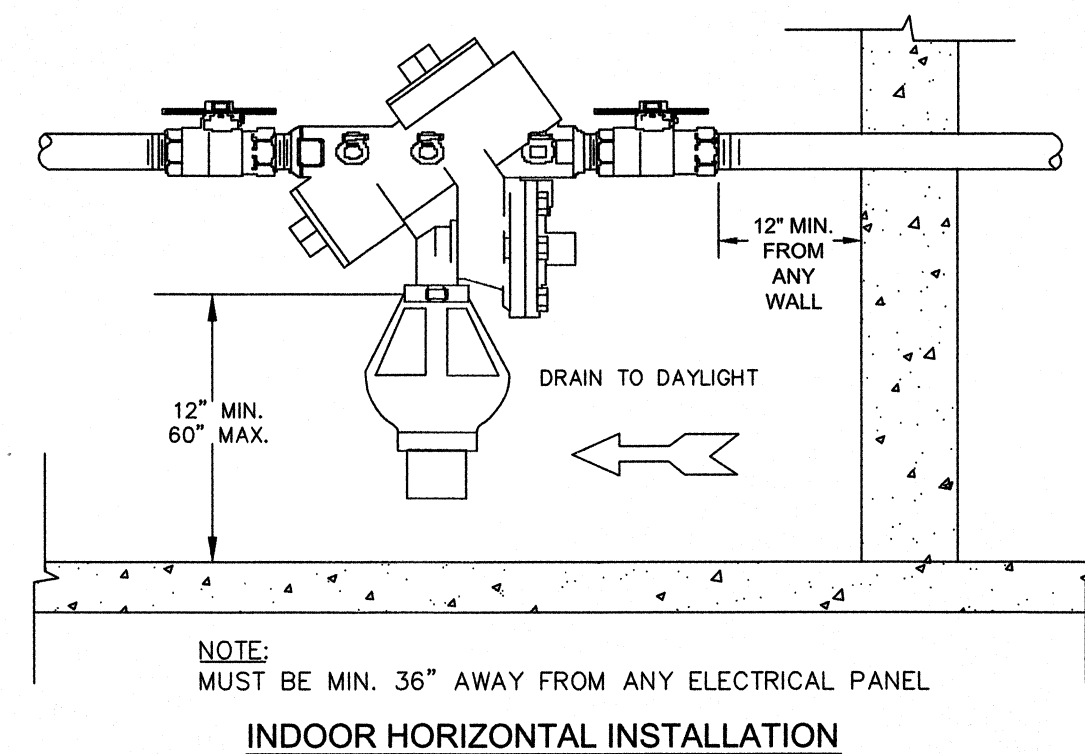
**SINGLE SERVICE SECTION VIEW**  
TYPICAL WATER SERVICE CONNECTION FOR RESIDENTIAL SINGLE FAMILY HOME ON CFPUA WATER SYSTEM  
NOT TO SCALE



**METER VAULT SECTION A-A**  
NOT TO SCALE

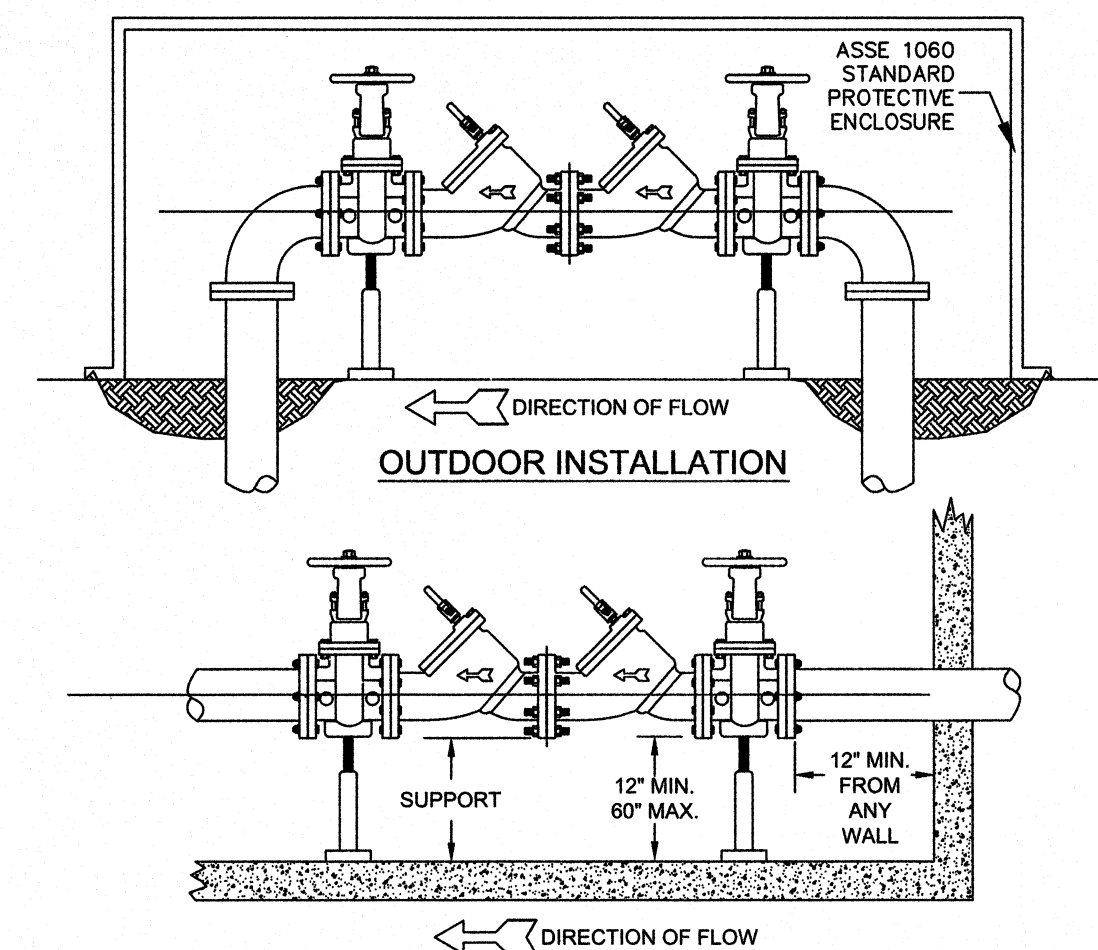


**WATER METER VAULT**  
FOR WATER METERS LARGER THAN 2"  
NOT TO SCALE



- NOTES:**
1. NO JOINT SHALL BE INSTALLED BETWEEN THE MAIN SERVICE TAP AND THE METER STOP. ALL SERVICES SHALL BE INSTALLED PERPENDICULAR TO MAIN.
  2. SERVICE SADDLES ON PVC MAINS SHALL BE WIDE BAND BRASS BODY: SADDLE McDONALD 3801 OR EQUIVALENT
  3. METER BOXES SUSCEPTIBLE TO TRAFFIC SHALL CONFORM TO ASTM A48, CLASS 30B AND AASHTO H20 LOAD RATING STANDARDS (SIP MODEL 4240 OR APPROVED EQUIVALENT)

**LARGE METER BOX**  
FOR 1 1/2" OR 2" WATER SERVICES  
NOT TO SCALE



**DOUBLE CHECK VALVE ASSEMBLY**  
NOT TO SCALE

**GENERAL NOTES:**

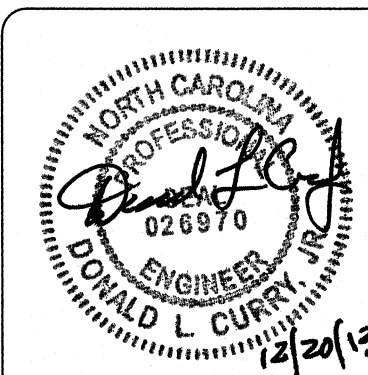
1. NO EXCAVATED MATERIAL SHALL BE PLACED IN ANY STREAM, DITCH OR DRAINAGE-WAY.
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3. THE CONTRACTOR IS RESPONSIBLE FOR TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES WHILE CONSTRUCTION IS IN PROGRESS.
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5. THE CONTRACTOR IS RESPONSIBLE FOR LAY DOWN & STOCKPILE AREAS (TO ARRANGE AND ENSURE COMPLIANCE WITH ALL LOCAL AND STATE REGULATIONS).

**THE DETAILS SHOWN HEREON SUPERCEDE CFPUA WRITTEN TECHNICAL SPECIFICATIONS VERSIONS 1.00 - 1.04**

**WATER DISTRIBUTION SYSTEM STANDARD DETAILS**

**WATER STANDARD DETAILS WSD-1**

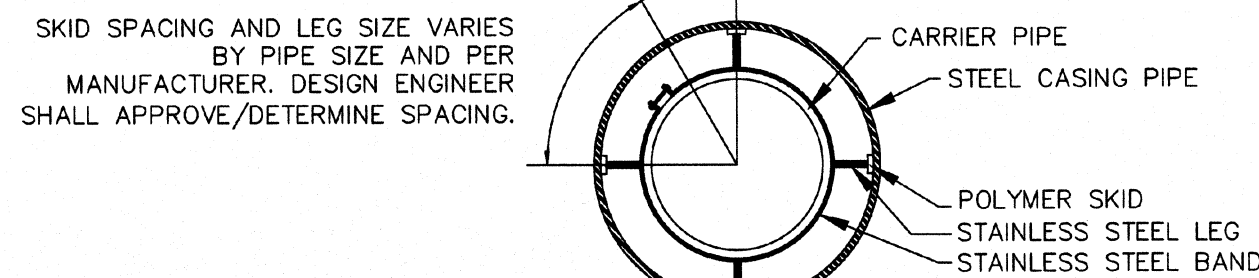
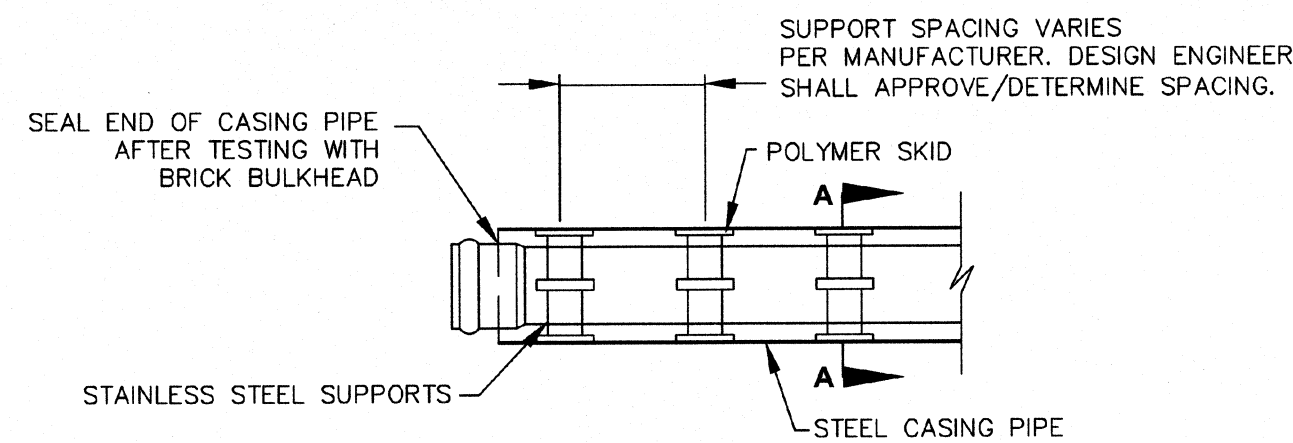
CAPE FEAR PUBLIC UTILITY AUTHORITY  
235 GOVERNMENT CENTER DRIVE  
WILMINGTON, NC 28403  
OFFICE: (910)332-6560



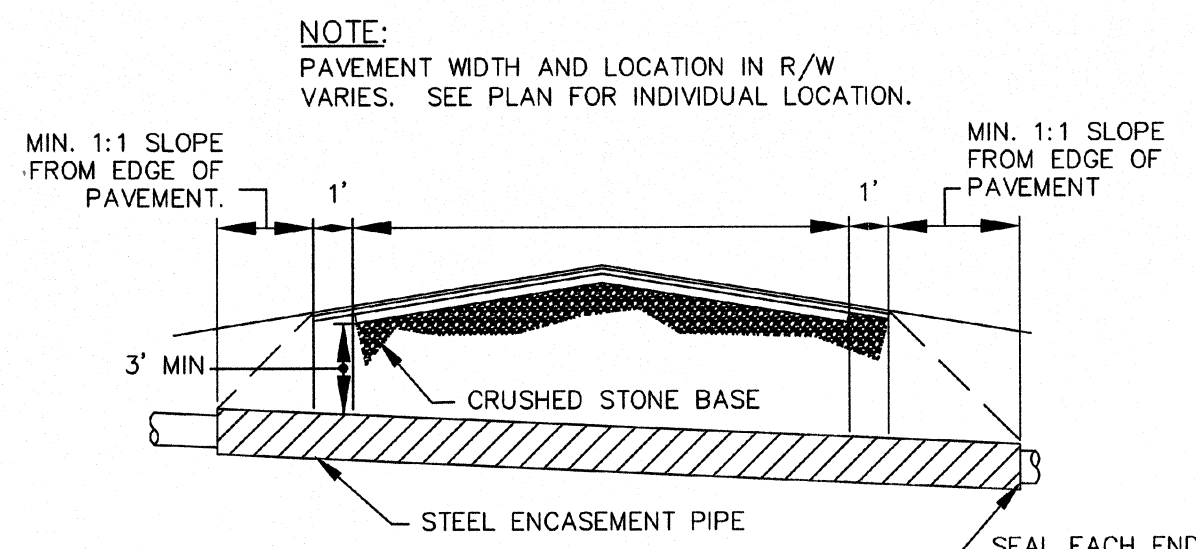
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SCALE: N/A  
DRAWN BY: CFPUA  
CHECKED BY: CFPUA  
PROJECT NO.:

SHEET NO: 1/2

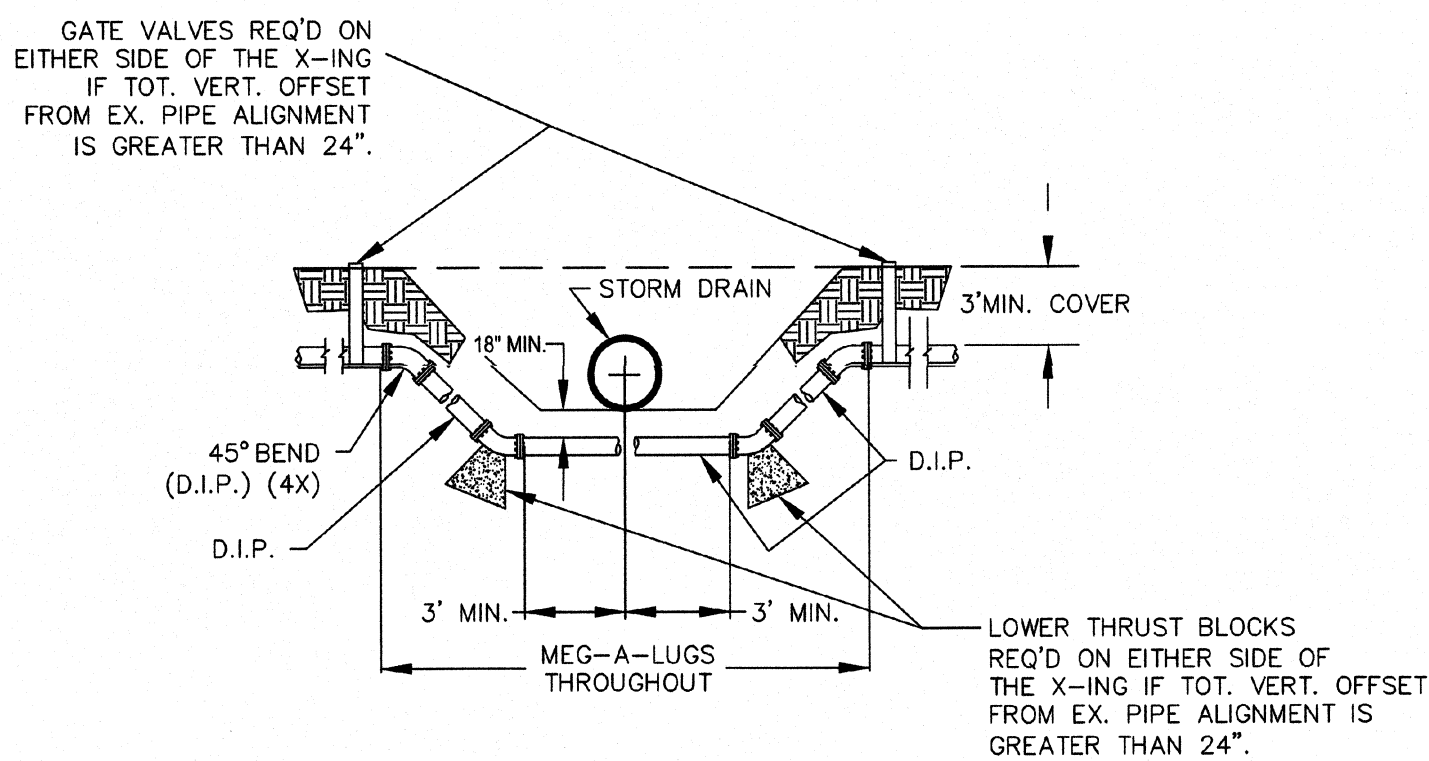




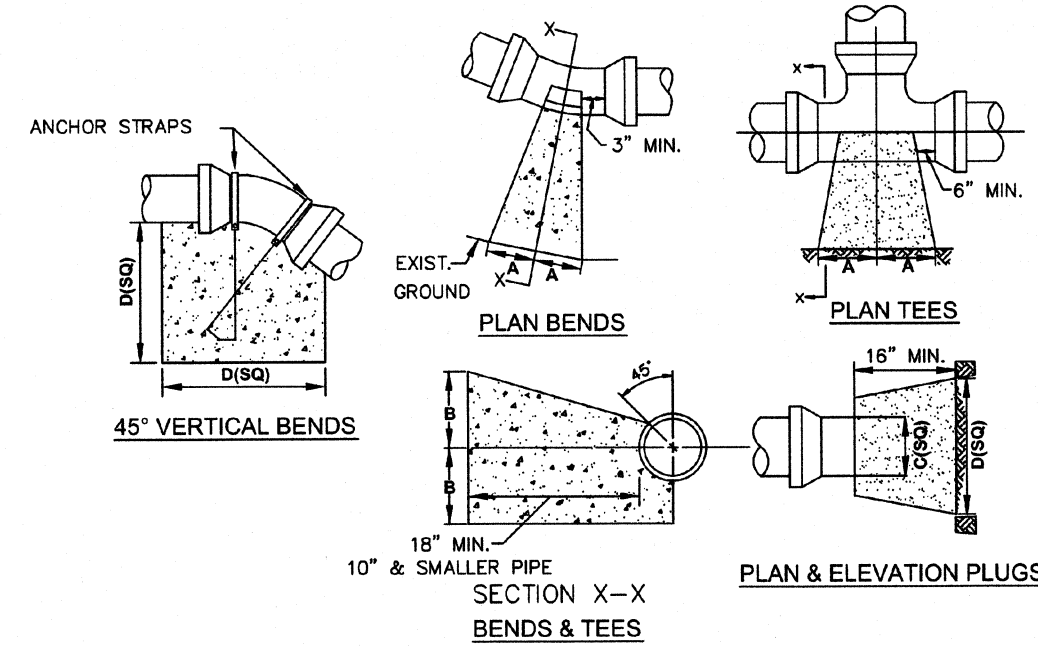
PIPE CASING SUPPORT DETAIL



TYPICAL BORING/JACKING DETAIL

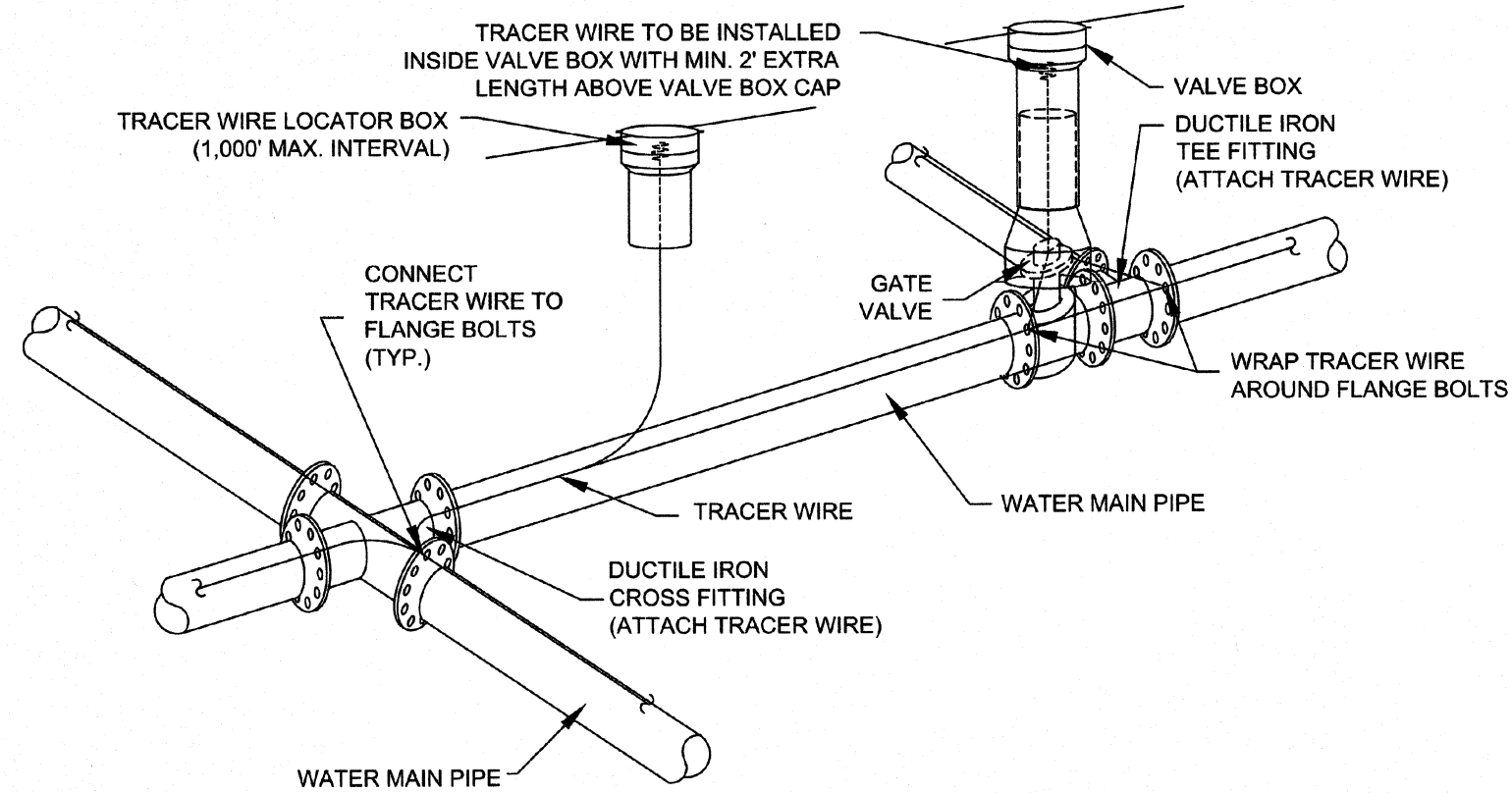


WATER MAIN DITCH & STORM DRAIN CROSSING

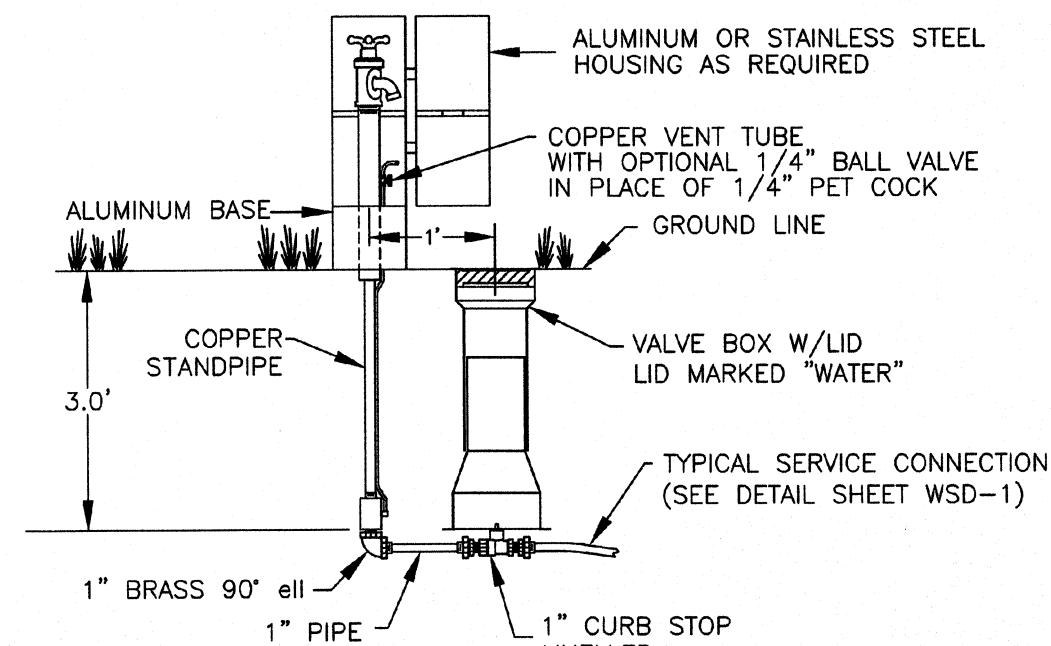


| SIZE | 90° BENDS |     | 45° BENDS |     | 22 1/2° BENDS |     | TEES/PLUGS |     | 45° VERT. BENDS |
|------|-----------|-----|-----------|-----|---------------|-----|------------|-----|-----------------|
|      | A         | B   | A         | B   | A             | B   | A          | B   |                 |
| 3"   | 8"        | 6"  | 5"        | 6"  | 3"            | 7"  | 6"         | 8"  | 27"             |
| 4"   | 8"        | 9"  | 5"        | 8"  | 3"            | 11" | 6"         | 9"  | 28"             |
| 6"   | 14"       | 11" | 9"        | 9"  | 8"            | 8"  | 12"        | 9"  | 36"             |
| 8"   | 16"       | 16" | 12"       | 12" | 10"           | 13" | 14"        | 13" | 42"             |
| 10"  | 18"       | 22" | 15"       | 14" | 14"           | 16" | 18"        | 15" | 50"             |
| 12"  | 20"       | 28" | 18"       | 17" | 16"           | 16" | 22"        | 18" | 62"             |
| 14"  | 26"       | 29" | 21"       | 19" | 18"           | 18" | 26"        | 20" | 72"             |
| 16"  | 33"       | 29" | 25"       | 21" | 20"           | 21" | 32"        | 21" | 83"             |
| 18"  | 40"       | 30" | 28"       | 24" | 22"           | 23" | 36"        | 24" | 88"             |

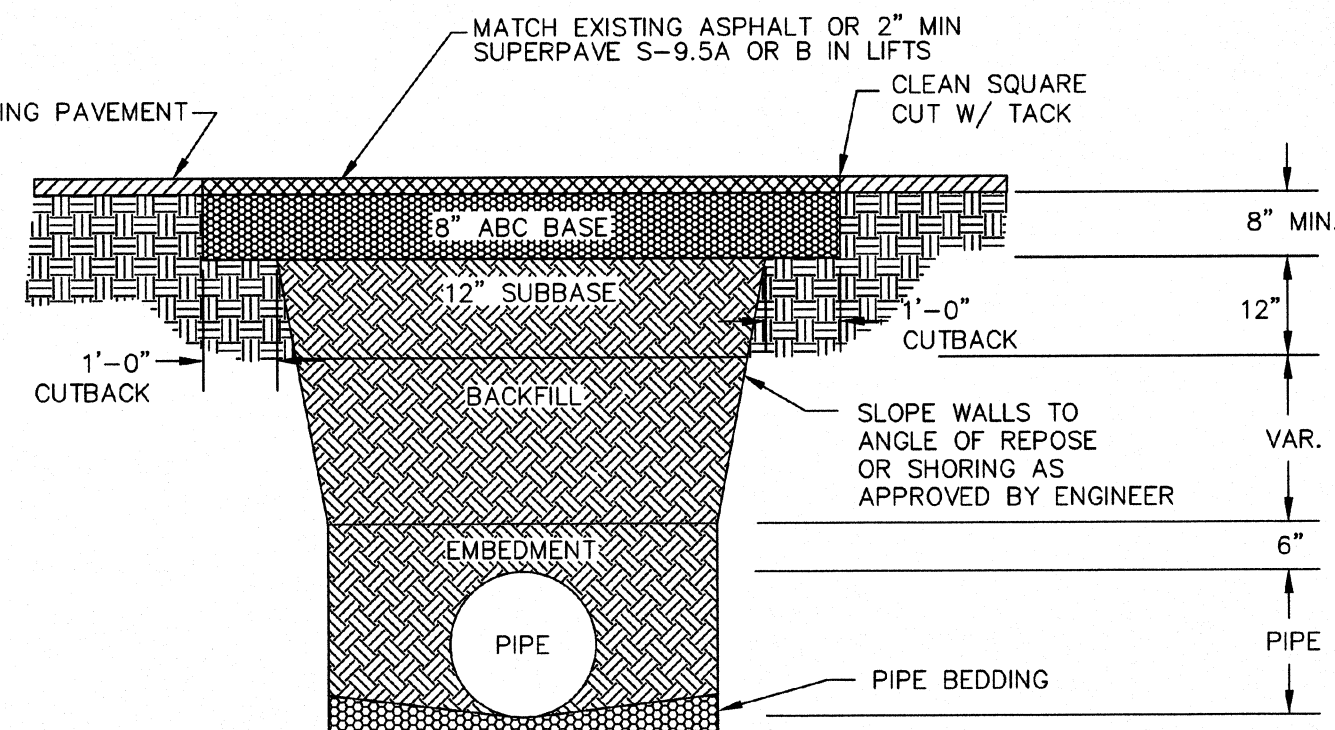
THRUST BLOCK DETAIL



TRACER WIRE DETAIL

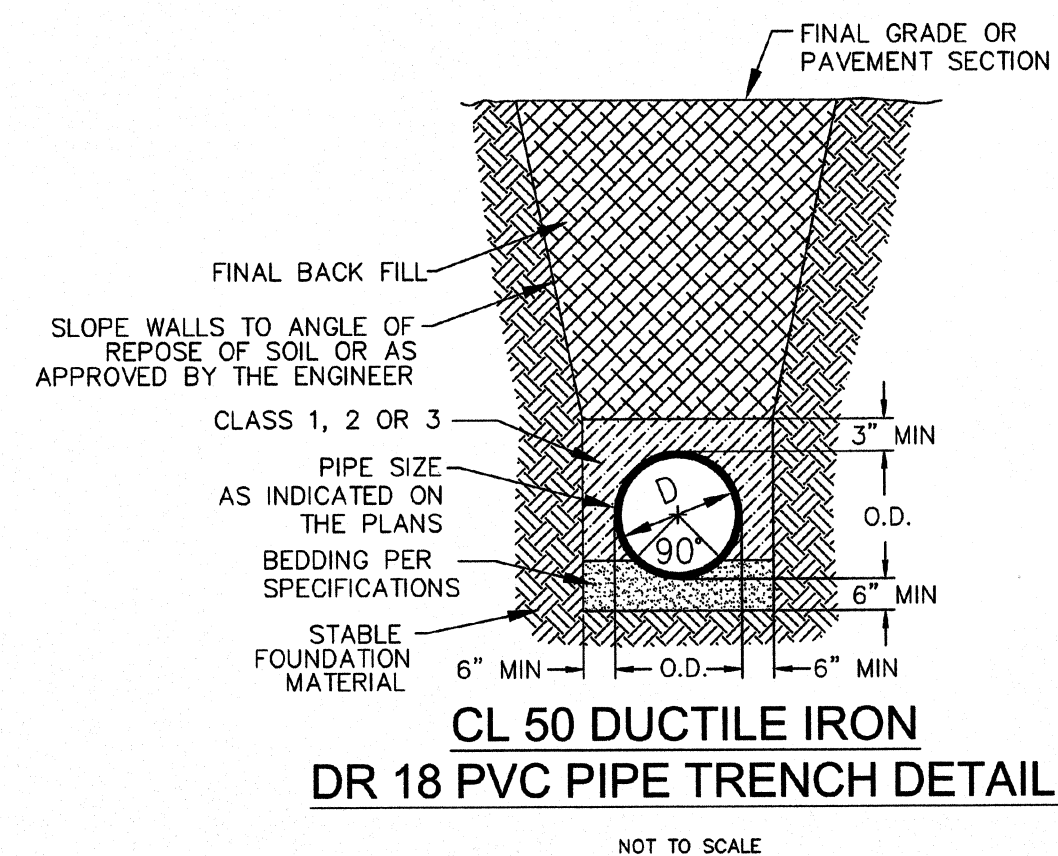


SAMPLING STATION



PAVEMENT REPAIR WHERE PIPE INSTALLED

(FOR PRIVATE ROADS AND PAVED AREAS; CONTRACTOR TO MEET MIN. REQUIREMENTS AS DEFINED BY RIGHT-OF-WAY OWNER FOR PUBLIC ROAD REPAIRS)



#### GENERAL NOTES:

- NO EXCAVATED MATERIAL SHALL BE PLACED IN ANY STREAM, DITCH OR DRAINAGE-WAY.
- THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES BEFORE ANY CONSTRUCTION BEGINS.
- THE CONTRACTOR IS RESPONSIBLE FOR TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES WHILE CONSTRUCTION IS IN PROGRESS.
- THE CONTRACTOR IS RESPONSIBLE FOR STABILIZATION OF ALL DISTURBED AREAS.
- THE CONTRACTOR IS RESPONSIBLE FOR LAY DOWN & STOCKPILE AREAS (TO ARRANGE AND ENSURE COMPLIANCE WITH ALL LOCAL AND STATE REGULATIONS).

THE DETAILS SHOWN HEREON SUPERCEDE CFPUA WRITTEN TECHNICAL SPECIFICATIONS VERSIONS 1.00 - 1.04

#### WATER DISTRIBUTION SYSTEM STANDARD DETAILS

#### WATER STANDARD DETAILS WSD-2

CAPE FEAR PUBLIC UTILITY AUTHORITY  
235 GOVERNMENT CENTER DRIVE  
WILMINGTON, NC 28403  
OFFICE: (910)332-6560

Stewardship. Sustainability. Service.

DATE:

1/9/12

SCALE:

N/A

DRAWN BY:

CFPUA

CHECKED BY:

CFPUA

PROJECT NO.:

SHEET NO.:

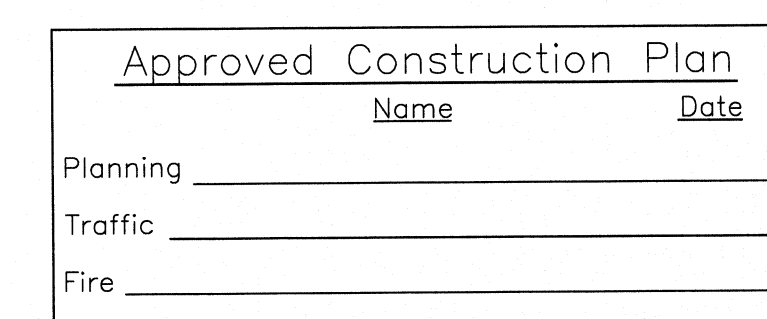
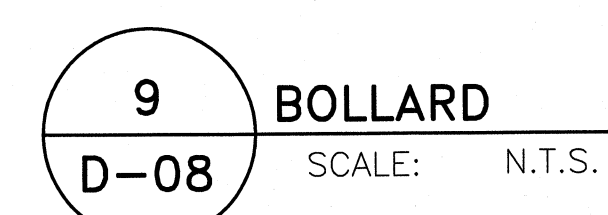
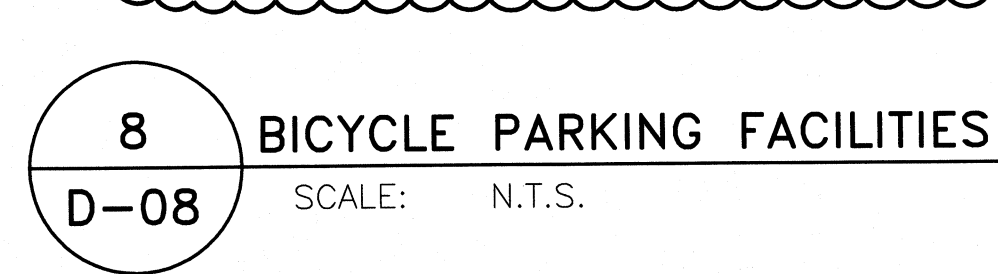
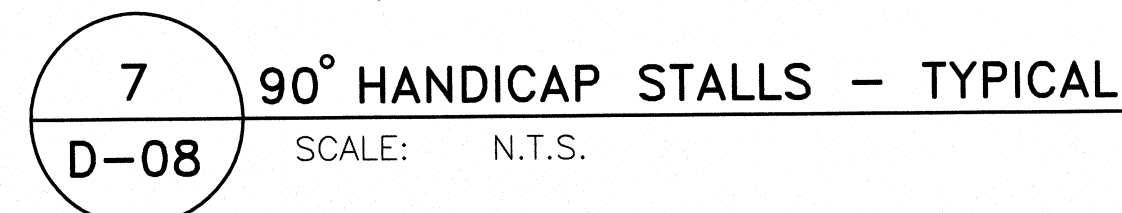
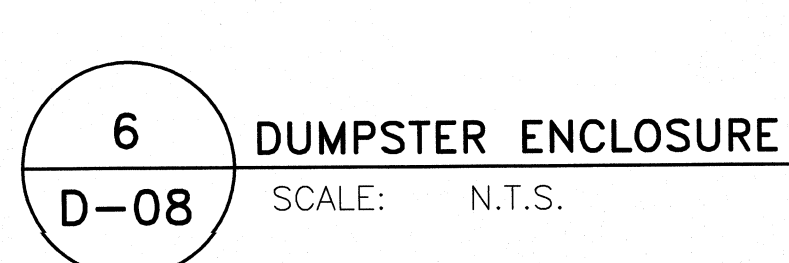
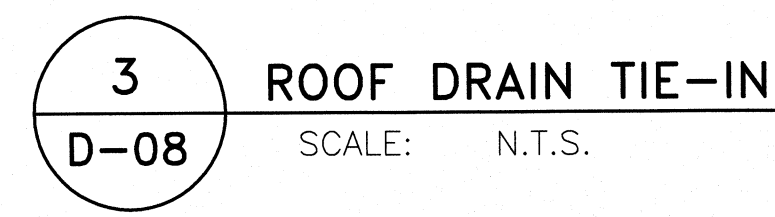
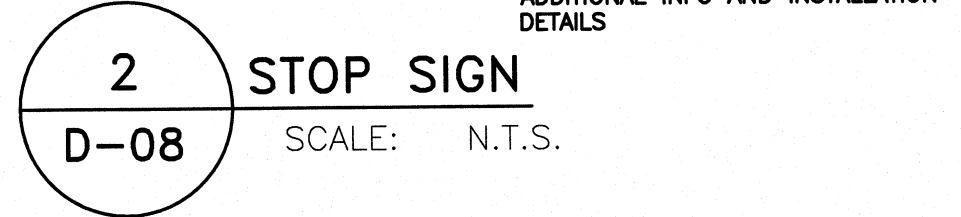
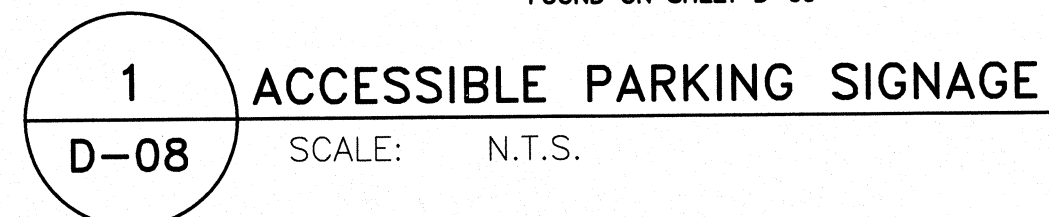
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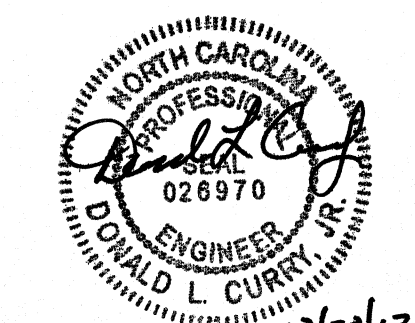
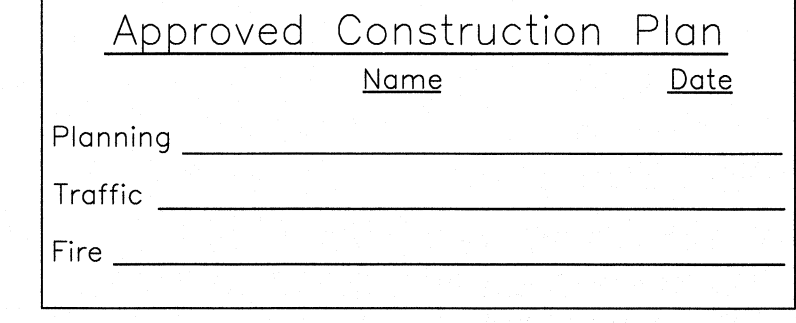
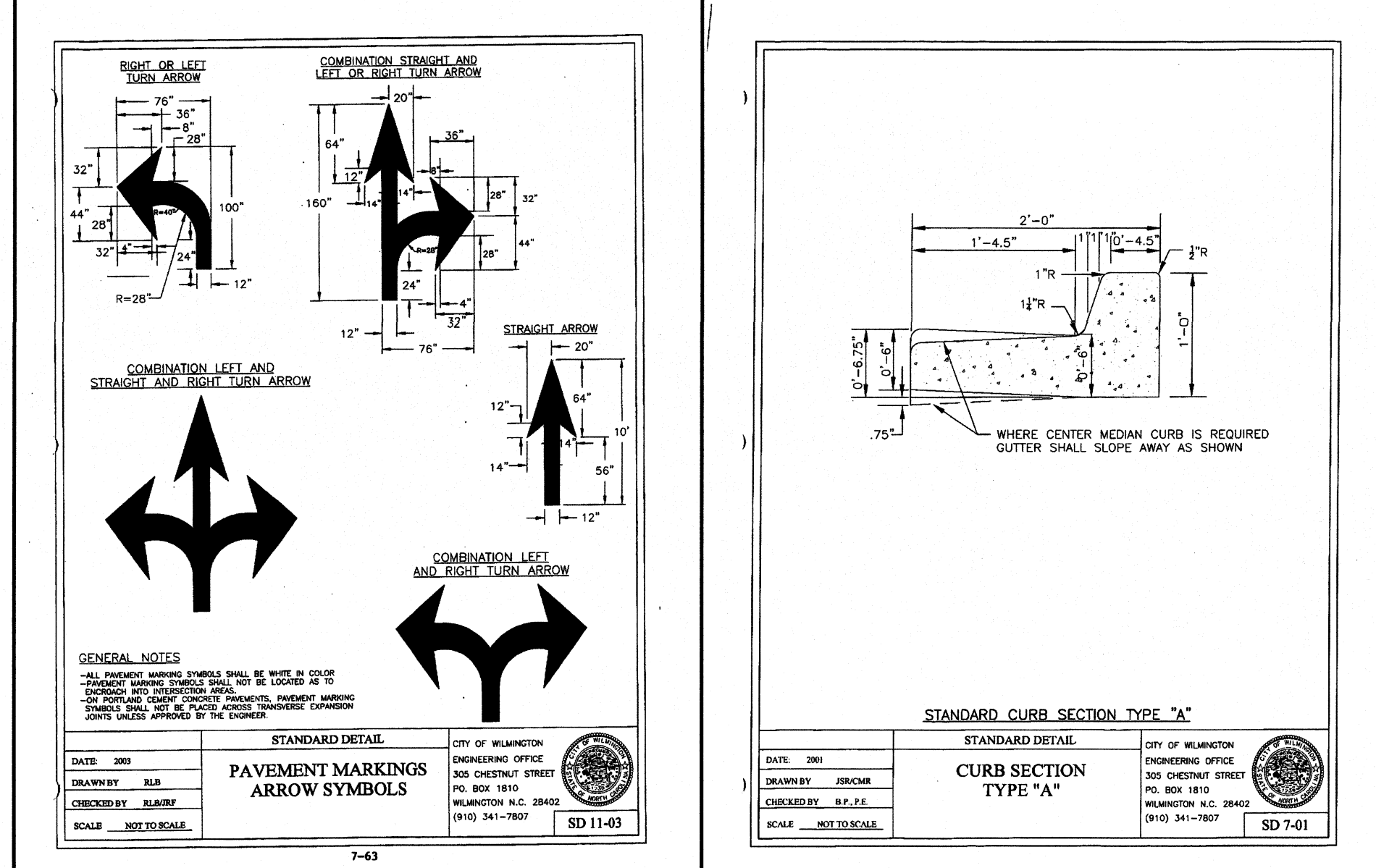
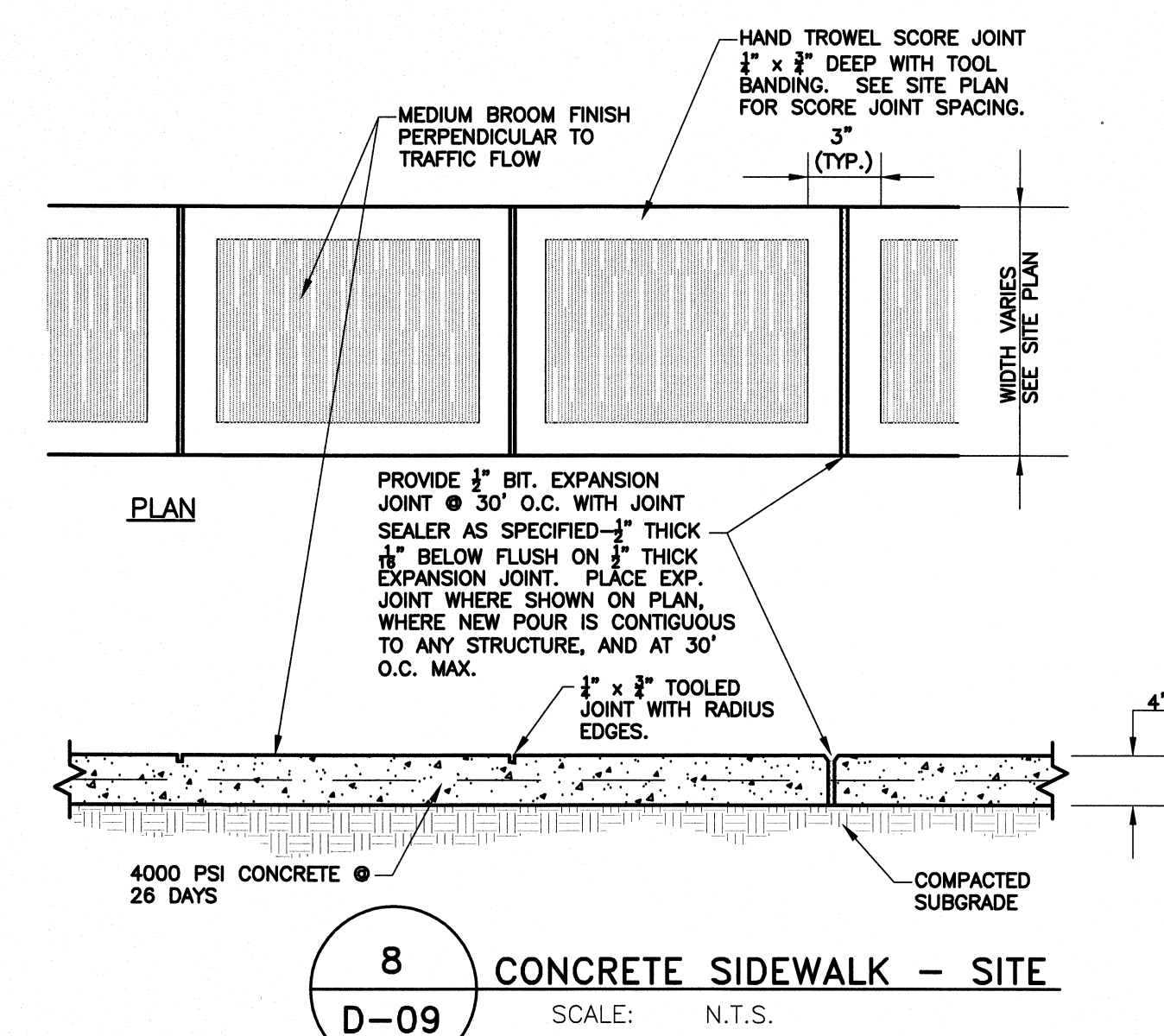
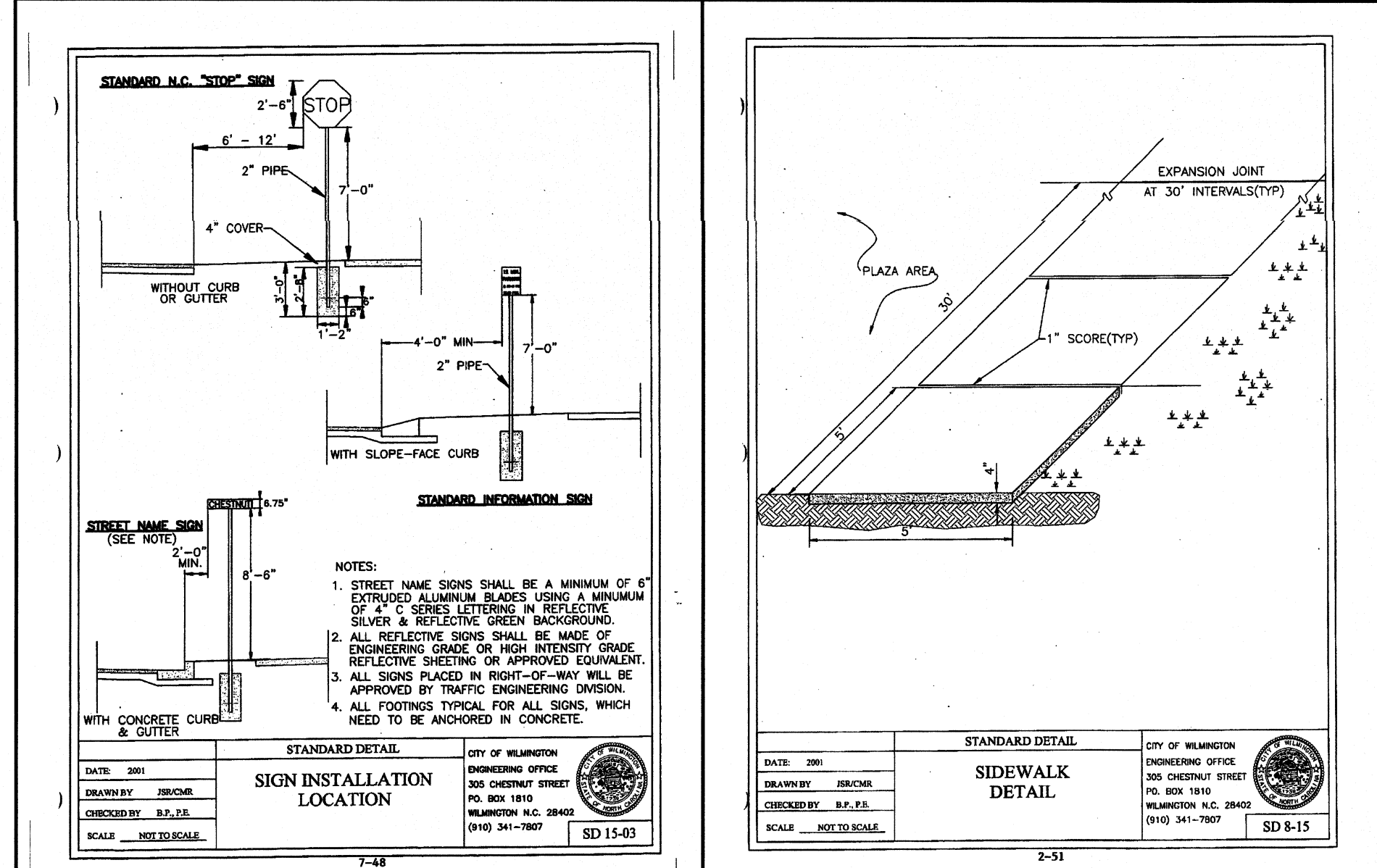
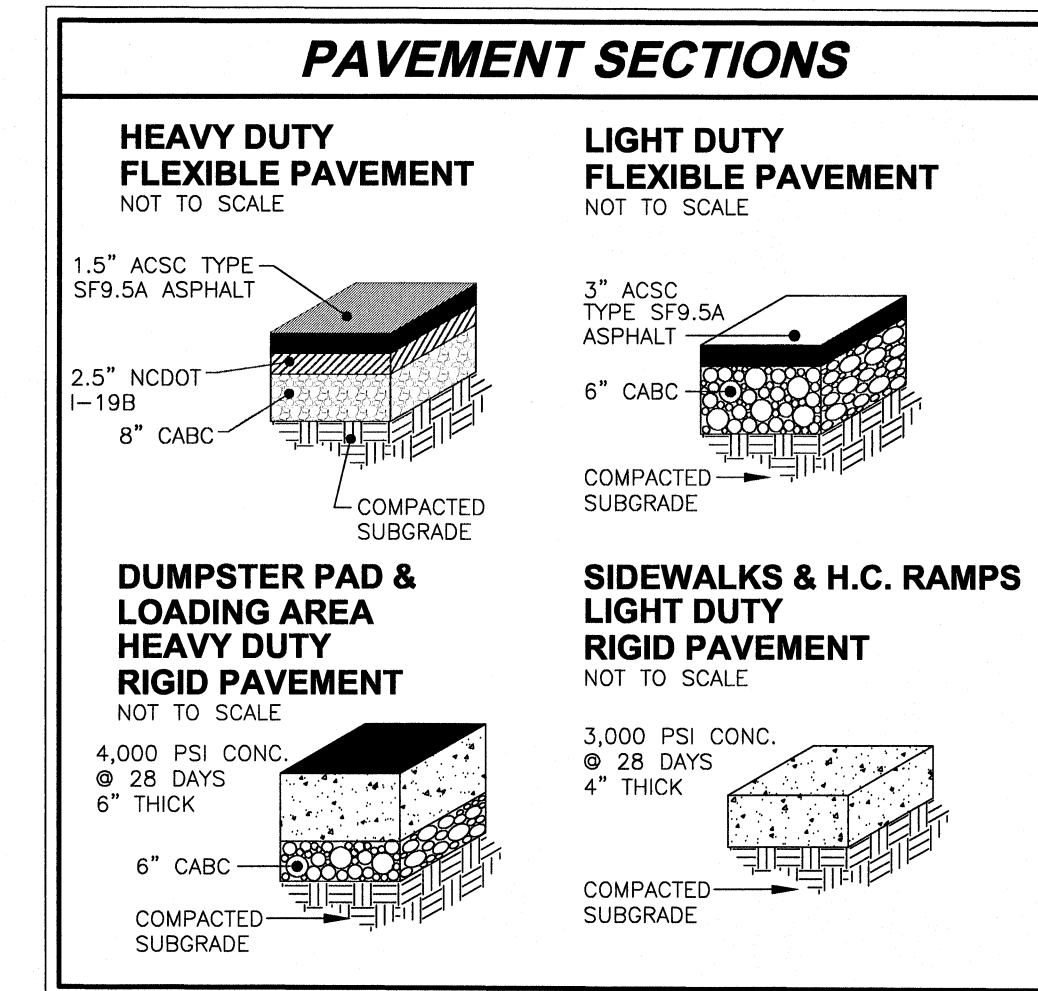
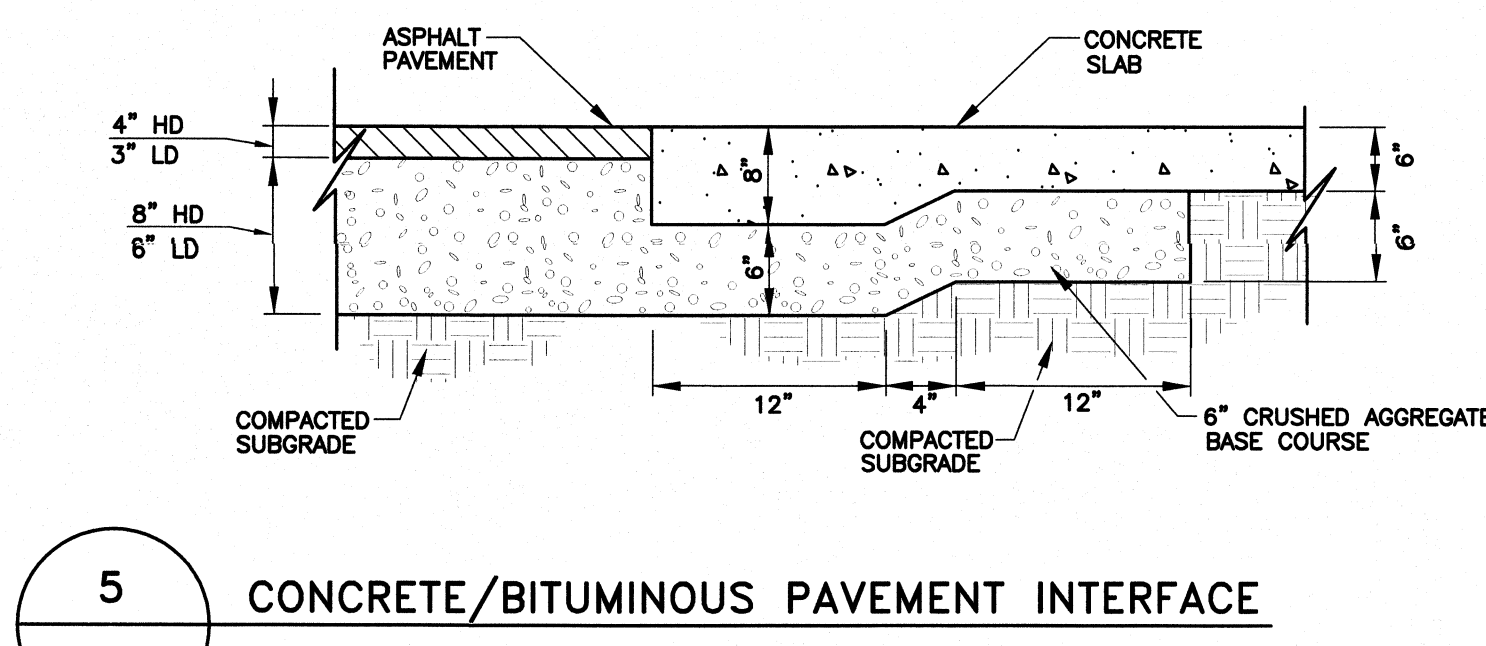
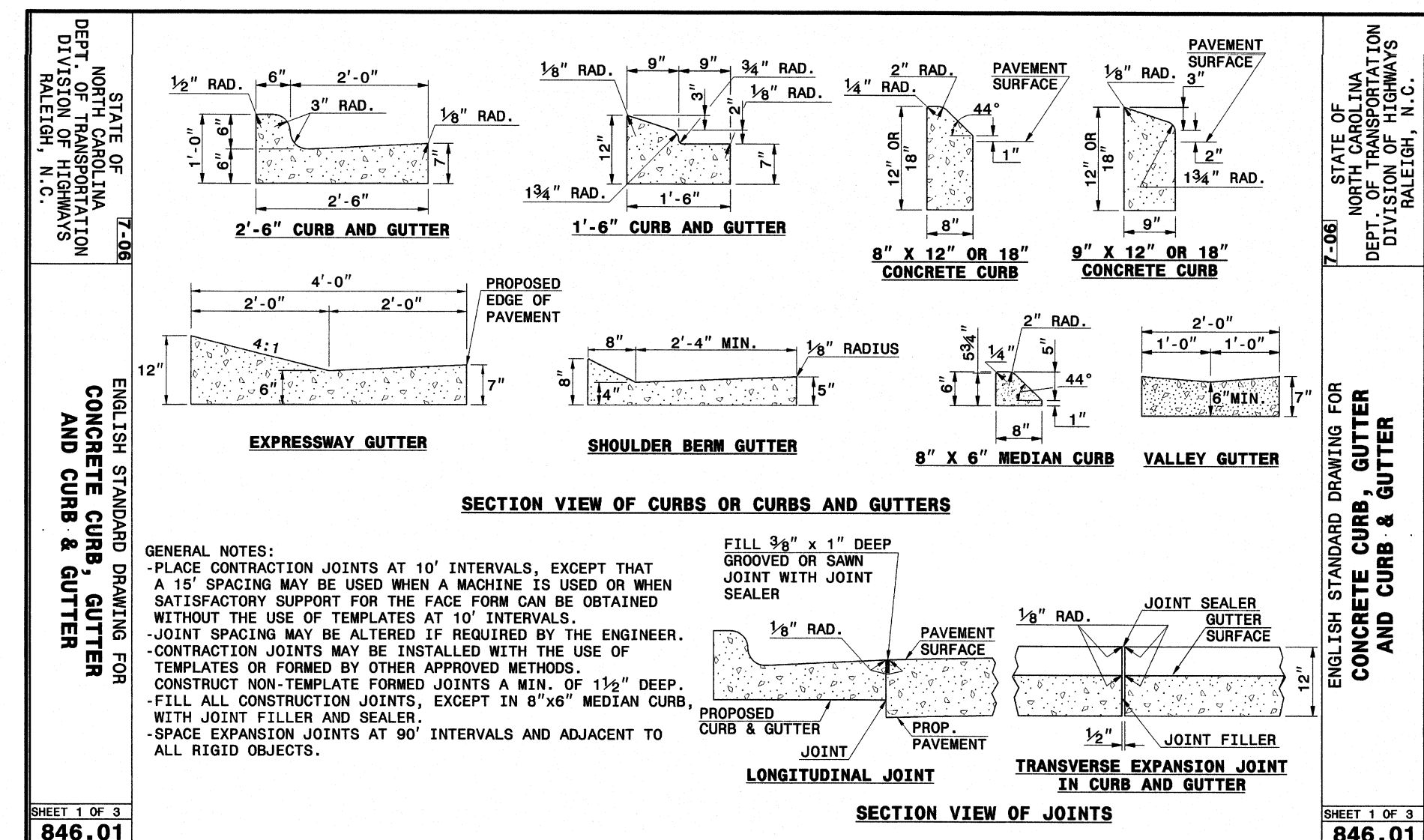
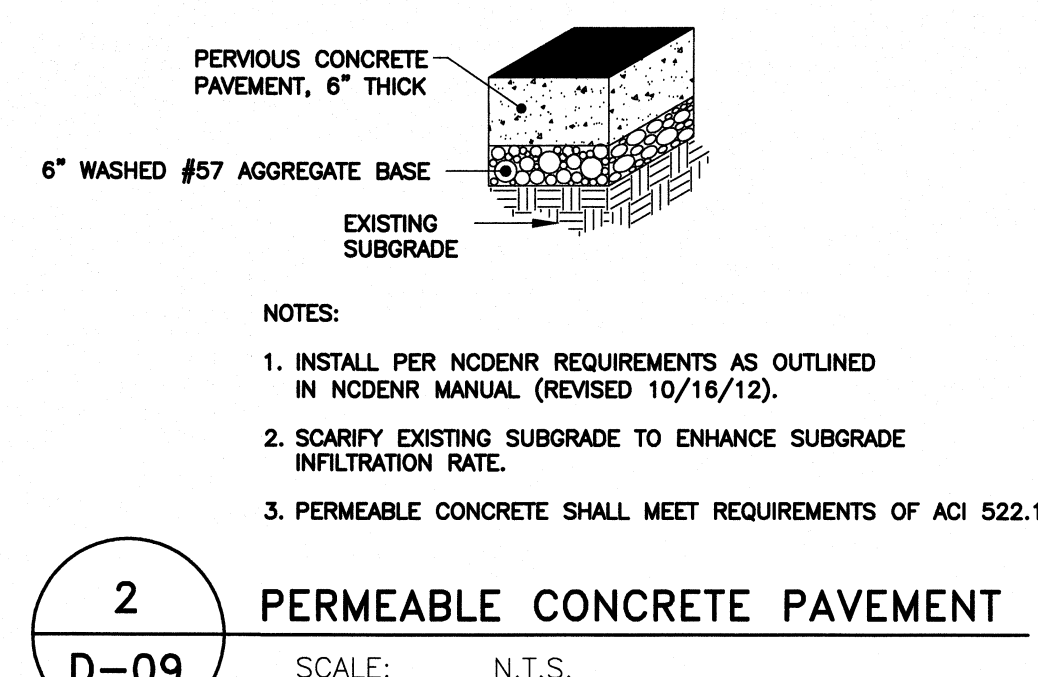






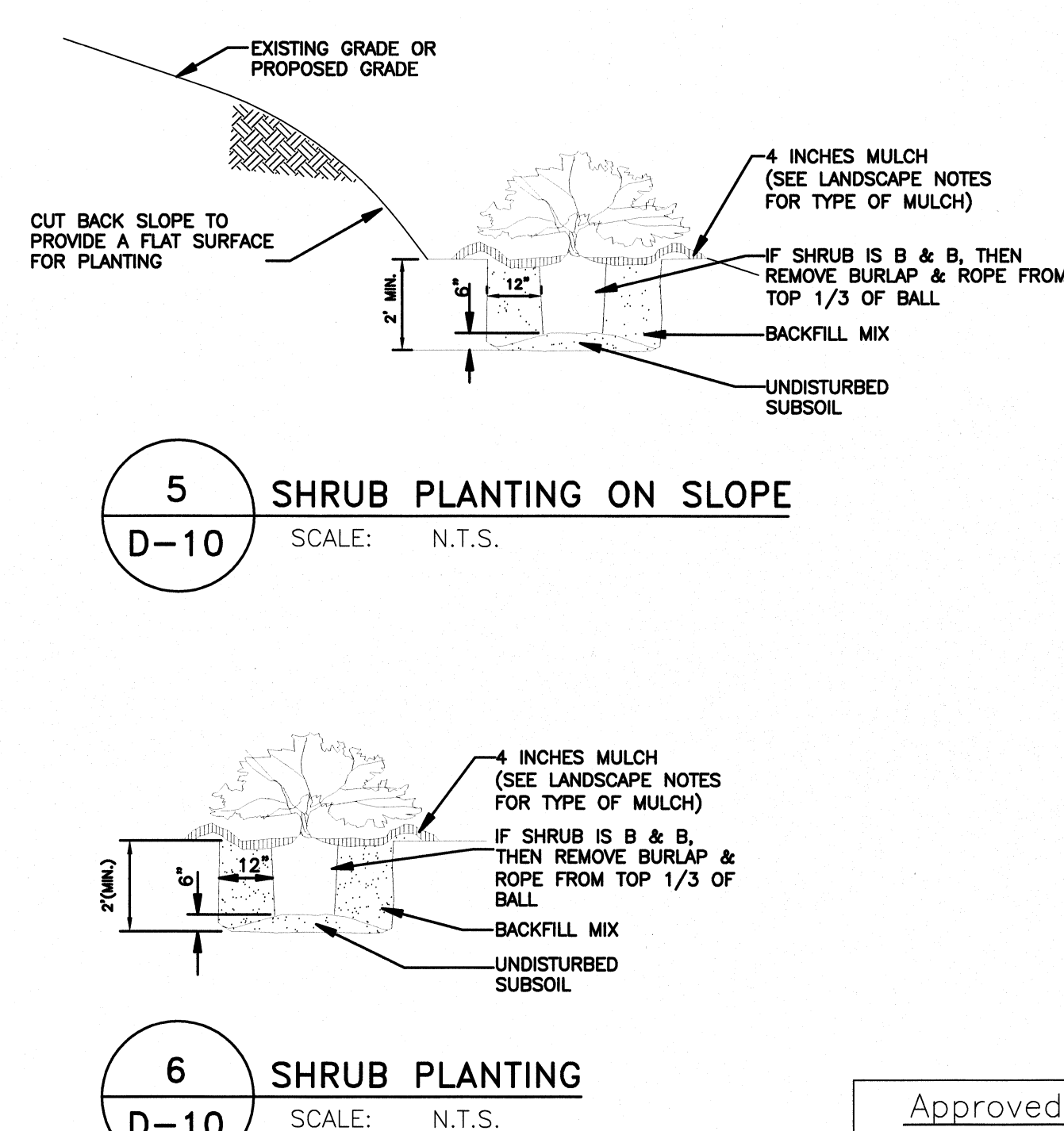
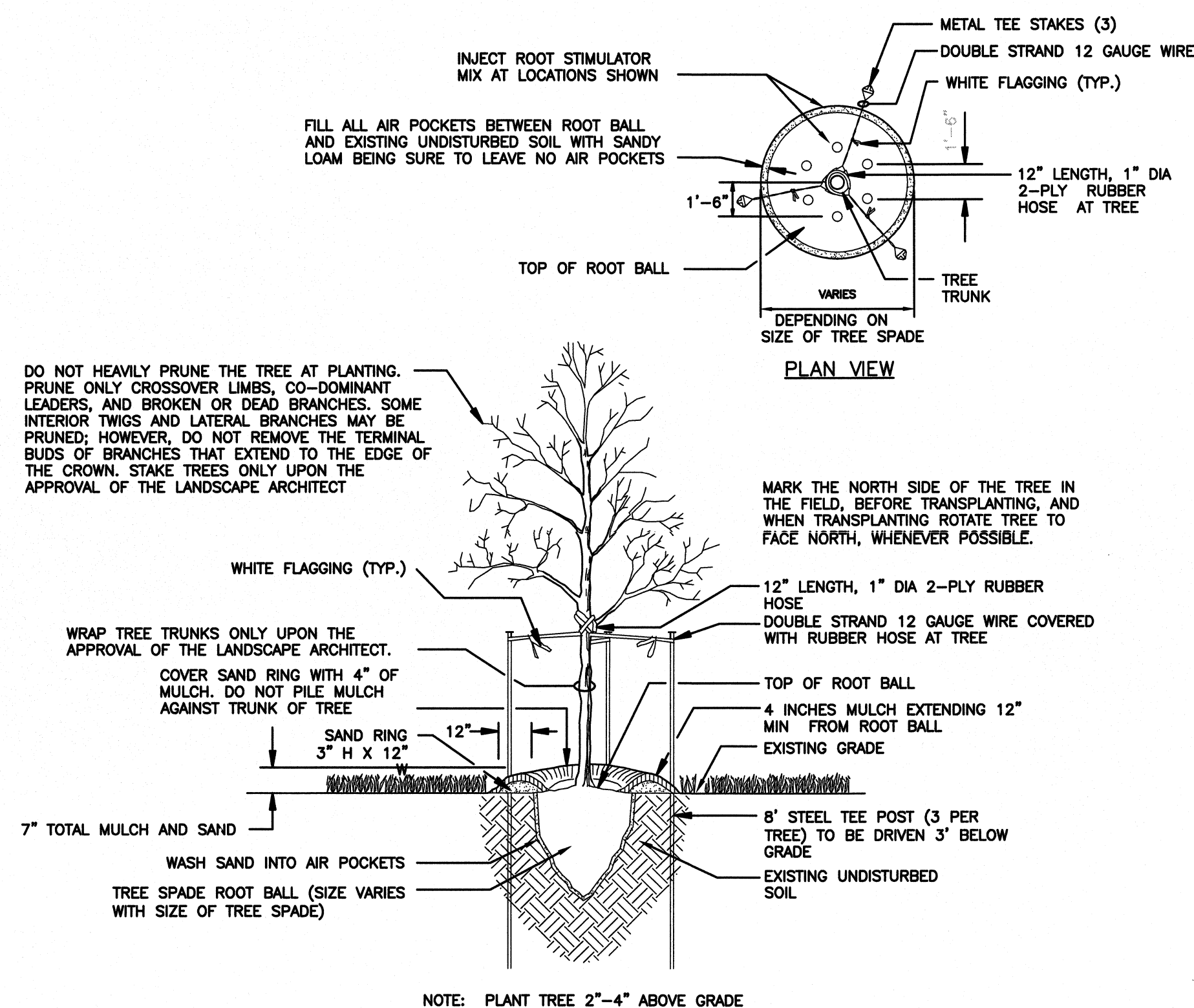
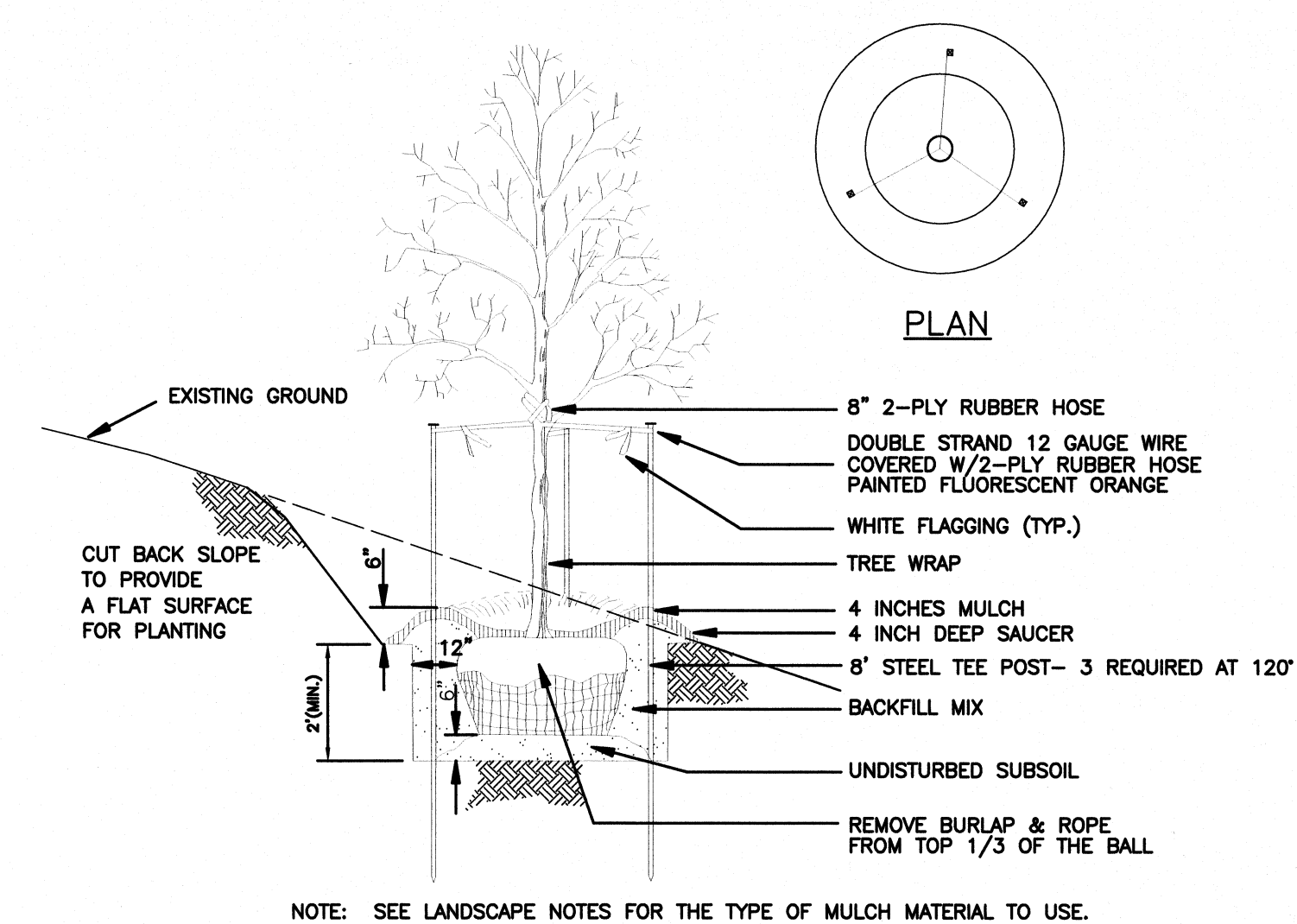
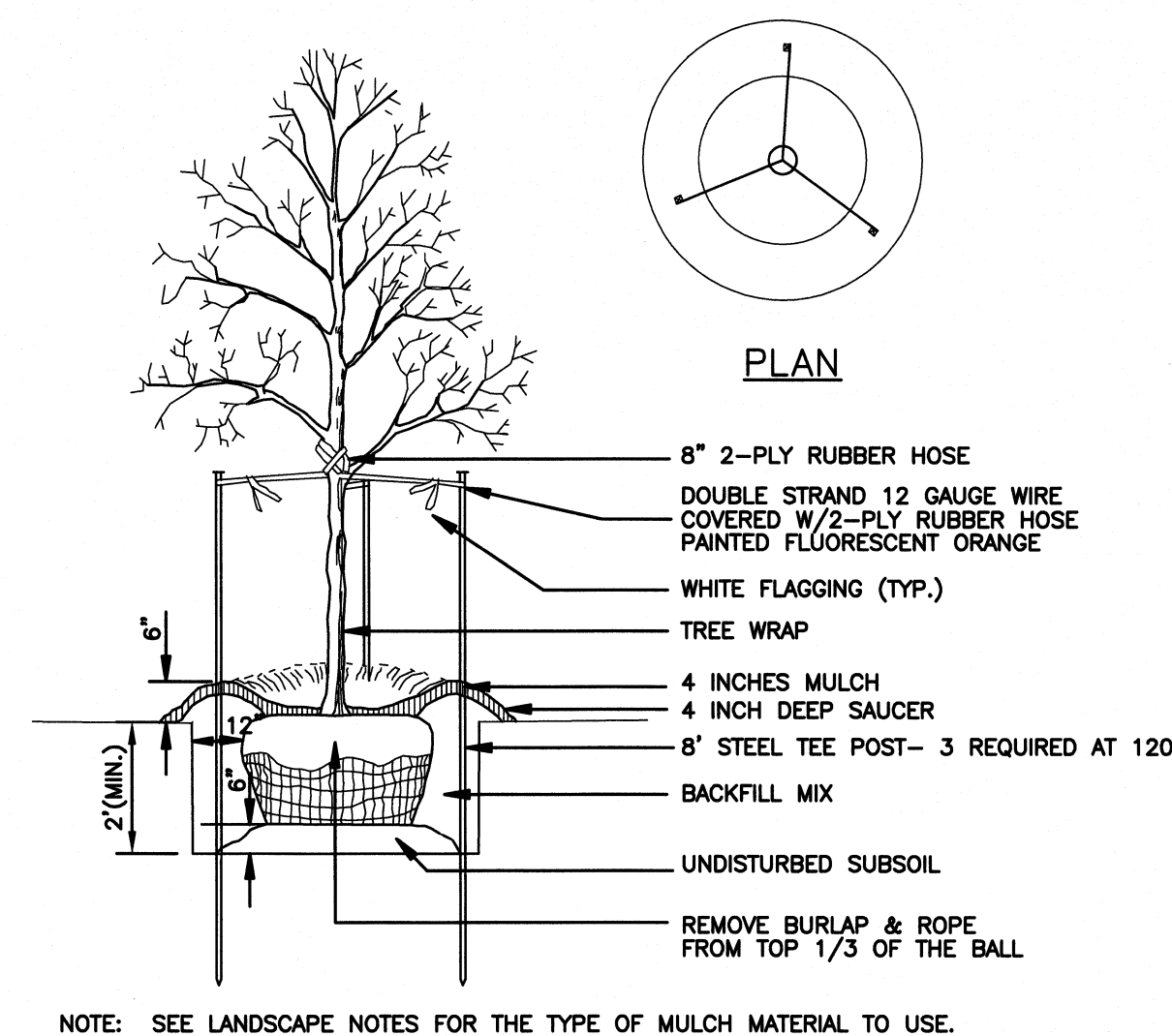
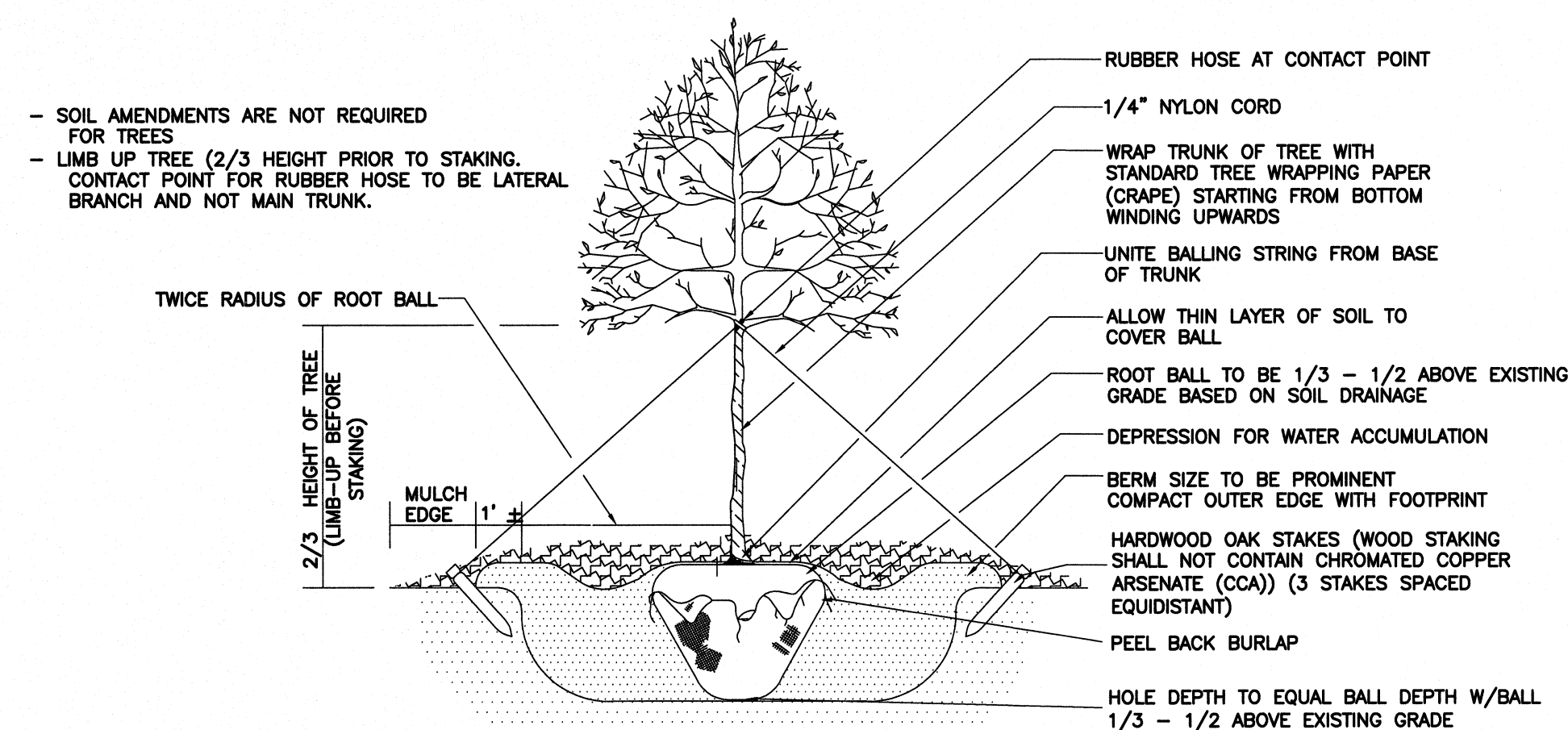






**D-09**





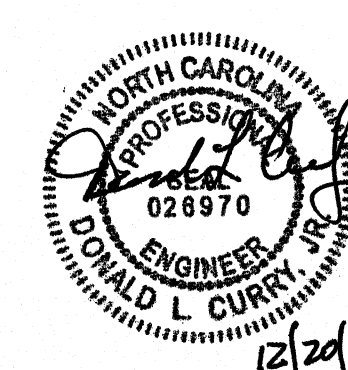
1. PLANT TREES WITH A MINIMUM CALIPER OF TWO INCHES MEASURED SIX INCHES ABOVE THE GROUND AND A ROOT BALL NO SMALLER THAN TWO FEET IN DIAMETER AND 16 INCHES IN DEPTH.
2. THE BEST TIMES FOR PLANTING ARE EARLY SPRING AND EARLY FALL. TREES PLANTED IN IN THE SUMMER RUN THE RISK OF DEHYDRATION.
3. PLANT ALL TREES AT LEAST THREE--AND-A-HALF FEET FROM THE END OF HEAD-IN PARKING SPACES IN ORDER TO PREVENT DAMAGE FROM CAR OVERHANGS.
4. DIG THE TREE PIT AT LEAST TWO FOOT WIDER THAN THE ROOT BALL AND AT LEAST SIX INCHES DEEPER THAN THE BALL VERTICAL DIAMENSION.
5. ESPECIALLY IN AREAS WHERE CONSTRUCTION ACTIVITY HAS COMPACTED THE SOIL, THE BOTTOM OF THE PIT SHOULD BE SCARIFIED OR LOOSENED WITH A PICK AX OR SHOVEL.
6. AFTER THE PIT IS DUG, OBSERVE SUB--SURFACE DRAINAGE CONDITIONS. WHERE POOR DRAINAGE EXISTS, THE TREE PIT SHOULD BE DUG AT LEAST AN ADDITIONAL TWELVE INCHES WIDER AND THE SOIL AMENDED TO ALLOW ROOTS GROW PROPERLY.
7. BACKFILL SHOULD INCLUDE A PROPER MIX OF SOIL AND FERTILIZER. ALL ROOTS MUST BE COMPLETELY COVERED. BACKFILL SHOULD BE THOROUGHLY WATERED AS IT IS PLACED AROUND THE ROOTS.
8. IMMEDIATELY AFTER IT IS PLANTED, THE TREE SHOULD BE SUPPORTED WITH STAKES AND STRAPS TO FIRMLY HOLD IT IN PLACE AS ITS ROOT SYSTEM BEGINS TO DEVELOP. REMOVE STAKES AND TIES AFTER ONE YEAR.
9. SPREAD AT LEAST THREE INCHES OF MULCH OVER THE ENTIRE EXCAVATION IN ORDER TO RETAIN MOISTURE AND KEEP DOWN WEEDS. AN ADDITIONAL THREE-INCH SAUCER AND MULCH SHOULD BE PROVIDED TO FORM A BASIN AROUND THE TRUNK OF THE TREE. THIS SAUCER HELPS CATCH AND RETAIN MOISTURE.
10. CONSCIENTIOUS POST-PLANTING CARE, ESPECIALLY WATERING, FERTILIZING AND PRUNING, IS A MUST FOR STREET AND PARKING LOT TREES. PRUNE OFF BRANCHED OR DAMAGED BRANCHES.

| Approved Construction Plan |      |
|----------------------------|------|
| Name                       | Date |
| Planning _____             |      |
| Traffic _____              |      |
| Fire _____                 |      |

**WILMINGTON**  
CITY OF  
NORTH CAROLINA  
Public Services • Engineering Division  
APPROVED DRAINAGE PLAN

Date: \_\_\_\_\_ Permit # \_\_\_\_\_

Signed: \_\_\_\_\_





EROSION AND SEDIMENTATION CONTROL NARRATIVE

PROJECT DESCRIPTION

The purpose of this project is for grading & fill operations. The project is owned by PHD @ College, LLC. The site is currently not occupied. Approximately 1.43 acres will be disturbed during construction. The maximum fill will be 2-3 feet.

The project is scheduled to begin construction in Winter 2014 with project completion and final stabilization by Spring 2014. The erosion and sediment control program for this project will include the installation of a suitable construction entrance, silt fence and inlet protection. Approximately 6,400sf of existing asphalt will remain through construction and be overlaid prior to completion.

ADJACENT PROPERTY

Adjacent property owners are noted on the Existing Conditions sheet.

SOILS

The soils at this site are silty sand.

EROSION AND SEDIMENT CONTROL MEASURES

All vegetative and structural erosion and sediment control practices shall be constructed and maintained by the contractor according to these plans and specifications and the minimum standards of the Dept. of Environmental Management, Land Quality Section and New Hanover County. The contractor shall also follow any additional requirements as outlined by the Project Engineer.

STRUCTURAL PRACTICES

- Vehicle wheels shall be clean when leaving the site to prevent the tracking of mud on paved roads.
- Construction Road Stabilization: Construction traffic shall be limited to stabilized areas. At a minimum, a temporary gravel construction entrance shall be provided as shown on this drawing.
- Silt Fence: Silt fences shall be provided where shown and as needed on the site plan. These barriers shall be used to contain sediment.
- Rip Rap/Gravel Filter Sediment Basins: Construct basin to the shape and dimensions shown in the details. The basin is to be placed below the existing ditch flow line by 2' with the berm built above as dimensioned.

VEGETATIVE PRACTICES

Temporary Seeding: All denuded areas shall receive temporary seeding within 14 days of completing initial earthwork. Temporary seeding shall also be used to stabilize finished grade areas if the time of year is outside the specified permanent seeding periods. Temporary seeding shall be in accordance with temporary seeding specifications.

MANAGEMENT STRATEGIES

- Perimeter measures are to be installed prior to grubbing or grading.
- Stockpile and/or waste areas must be maintained within the limits of the areas protected by the proposed measures and otherwise temporarily seeded if to be left stockpiled over 14 calendar days.
- Construction shall be planned so that grading operations can begin and end as quickly as possible.
- Silt Fences and tree protection fence shall also be installed prior to or as a first step in construction.
- The Contractor shall be responsible for the installation and maintenance of all erosion and sediment control practices. Vegetative Ground Cover immediately following grading, all areas shall receive either permanent or temporary seeding, as applicable, as follows:

|                 | Feb-May                   | June-Sept                            | Oct-Jan                   |
|-----------------|---------------------------|--------------------------------------|---------------------------|
| Permanent Seed: | K-31 Fescue<br>5#/1000 SF | K-31 Fescue<br>5#/1000 SF            | K-31 Fescue<br>5#/1000 SF |
| Temporary Seed: | Winter Rye<br>50#/Ac      | German Millet<br>40#/Ac              | Winter Rye<br>50#/Ac      |
| Fertilizer:     | 10-10-10 25#/1000 SF      | Mulch: Straw 90#/1000 SF             |                           |
| Lime:           | 100#/1000 SF              | Tack: 200 gallons/Ac on all mulching |                           |

MAINTENANCE:

- Reseed and mulch bare spots larger than 9 square feet (limited to 5% maximum of site area.)
- Maintain all seeded areas until uniform stand is acceptable.
- If growth is not established by final project inspection, continue specified attention until the stand is acceptable.
- Correct and repair all undue settling and erosion within 1 year after final inspection.
- Remove from the site, all erosion control structures after complete stabilization at end of construction period.
- Remove silt from sediment pits and from behind check dams when silt is within half depth of the pit or spillway. Dispose of in an area where silt cannot re-enter pit/trap.

CALCULATIONS:

The practice utilized for the proposed site did not require formal calculations.

OWNER: PHD @ College, LLC, 3930 Max Pl. Boynton Beach, FL 33436

Erosion Control Notes:

- Obtain erosion control plan approval prior to beginning land disturbance. Retain a copy of the approved erosion control plan and permit on site. Call New Hanover County to notify the Inspector of a start date prior to land disturbance.
- Construct the construction entrance as shown on the plan. Maintain the construction entrance daily to ensure that mud and silt will not be tracked onto the paved surface. If mud is tracked onto the road surface, it is to be removed immediately.
- Construction entrance location may not vary without prior approval from Engineer and City of Wilmington.
- Clear the area needed to construct the perimeter erosion control measures including silt fence, and silt fence outlets. Erosion control measures downstream of all pipes shall remain in-place until permanent measures are stabilized.
- Install silt fence and silt fence outlets.
- Begin clearing, grubbing, and topsoil stripping for building pad and surrounding improvements.
- Rough grade the site.
- Construct sanitary sewer system throughout project. Do not excavate more than can be installed in that day's work. Seed, mulch, and tack disturbed areas after each day's work.
- Construct the storm sewer system throughout the project. Install inlet protection devices.
- Seed, straw and tack areas behind the curb and gutter that are graded to their final disposition.
- Contact City of Wilmington Erosion Control for inspection prior to removal of erosion control measures.
- Upon stabilization of seeded areas and approval from City of Wilmington, remove silt fence and silt fence outlets.
- Seed, straw and tack any remaining exposed areas.

MAINTENANCE NOTES:

- DO NOT LET ANY AREA REMAINED EXPOSED FOR MORE THAN 14 CALENDAR DAYS WITHOUT APPLYING TEMPORARY SEEDING.
- MAINTAIN ALL EROSION CONTROL MEASURES DAILY AND RESEED DISTURBED AREAS AS NEEDED.
- INSPECT ALL EROSION CONTROL MEASURES WEEKLY AND AFTER EACH RAINFALL EVENT. REPAIR AS NEEDED.
- AT THE END OF EACH DAY'S STORM DRAINAGE OPERATION, CONSTRUCT A TEMPORARY PIPE INLET PROTECTION DEVICE UNTIL THE NEXT DAY'S OPERATION CONTINUES.

EROSION CONTROL MAINTENANCE PLAN

ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF-PRODUCING RAINFALL EVENT. STRUCTURES THAT SHALL BE INSPECTED INCLUDE BUT ARE NOT LIMITED TO:

SILT FENCE AND FABRIC INLET PROTECTION ANY FABRIC WHICH COLLAPSES, TEARS, DECOMPOSES, OR BECOMES INEFFECTIVE SHALL BE REPLACED IMMEDIATELY. SEDIMENT DEPOSITS SHALL BE REMOVED WHEN SEDIMENT BEHIND THE FENCE REACHES 6".

SEEDING, FERTILIZING, AND MULCHING SEEDED AREAS SHALL BE INSPECTED FOR FAILURE AND NECESSARY REPAIRS AND RE-SEEDING SHALL BE MADE WITHIN THE SAME SEASON.

TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT MAINTAIN THE GRAVEL PAD IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE CONSTRUCTION SITE. THIS MAY REQUIRE PERIODIC TOPDRESSING WITH 2-INCH STONE. AFTER A RAINFALL, IMMEDIATELY REMOVE ALL OBJECTIONABLE MATERIALS SPILLED, WASHED, OR TRACKED ONTO ROADWAYS.

HARDWARE CLOTH AND GRAVEL INLET PROTECTION INSPECT THE BARRIER AFTER EACH RAIN, REMOVE SEDIMENT WHEN HALF FULL TO PROVIDE ADEQUATE STORAGE VOLUME FOR SUBSEQUENT RAINS. UPON STABILIZATION OF DRAINAGE AREA, REMOVE ALL MATERIALS AND ANY UNSTABLE SOIL, EITHER SALVAGE OR DISPOSE OF PROPERLY. BRING DISTURBED AREA TO PROPER GRADE, THEN SMOOTH AND COMPACT IT. STABILIZE ALL BARE AREAS AROUND THE INLET.

TEMPORARY PIPE INLET PROTECTION TEMPORARY PIPE INLET PROTECTION MUST BE ROUTINELY INSPECTED AFTER RAINFALL EVENTS AND MAINTAINED AS NEEDED TO ENSURE THE MEASURE IS IN PROPER WORKING CONDITION. METAL POSTS SHALL BE REPLACED IS DAMAGED. ACCUMULATED SEDIMENT SHALL BE REMOVED. ANY SILT WHICH COLLAPSES, TEARS, DECOMPOSES, OR BECOMES INEFFECTIVE SHALL BE REPLACED IMMEDIATELY.

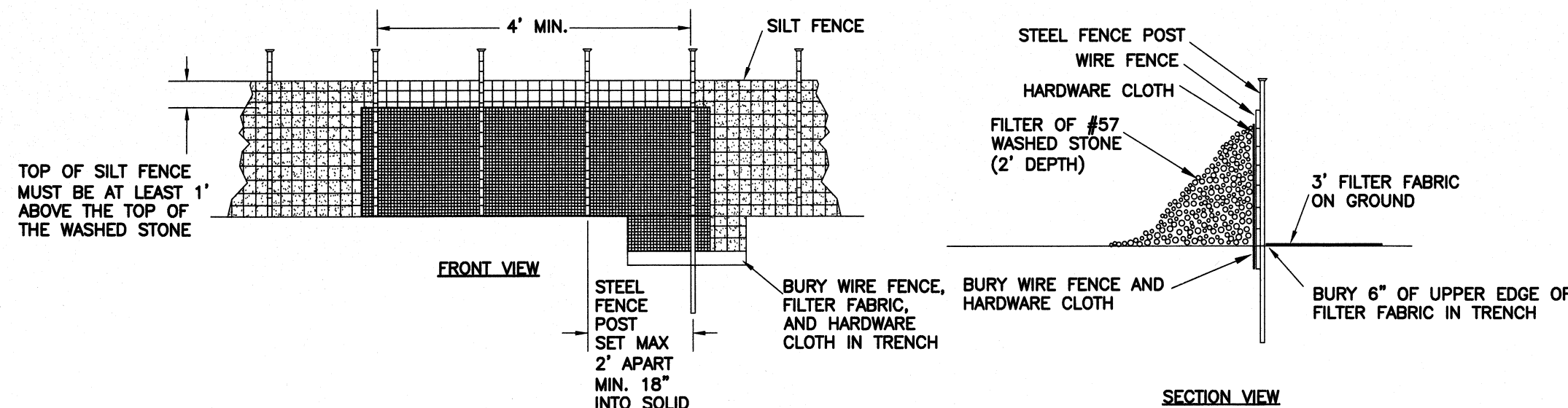
PIPE OUTLET PROTECTION STONE SHALL BE INSPECTED AFTER EACH RAINFALL EVENT. DISLOCATED STONE SHALL BE REPLACED IMMEDIATELY AND ANY SCOUR OR ERODED AREAS SHALL BE REPAIRED IMMEDIATELY.

1

EROSION CONTROL MAINTENANCE PLAN

D-11

SCALE: N.T.S.

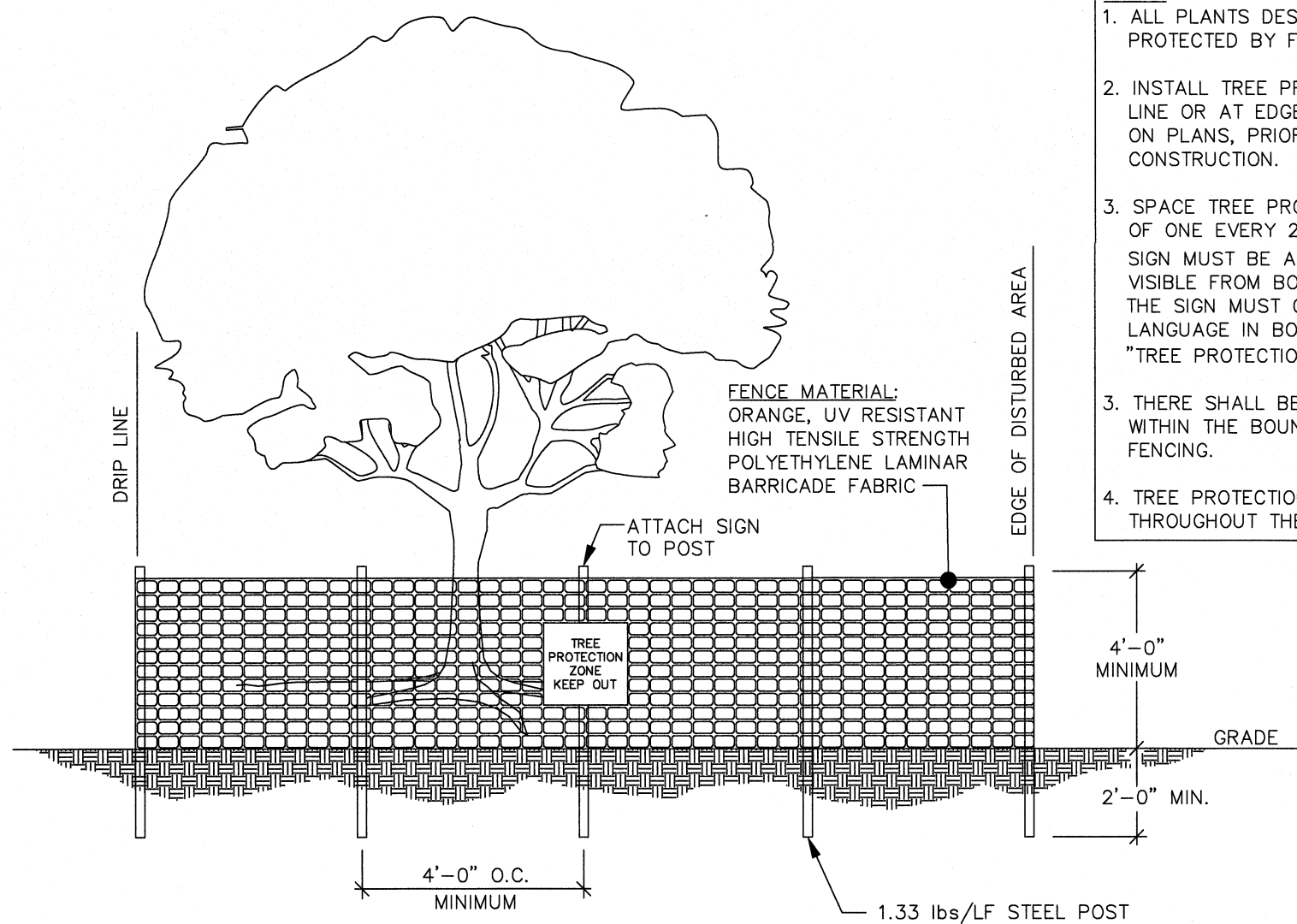


2

STD. SILT FENCE OUTLET

D-11

SCALE: N.T.S.



4

TREE PROTECTION FENCE

D-11

SCALE: N.T.S.

CONSTRUCTION SPECIFICATIONS

- CAREFULLY FIT HARDWARE CLOTH OR COMPARABLE WIRE MESH WITH 1/2-INCH OPENING OVER ALL BLOCK OPENING TO HOLD GRAVEL IN PLACE.
- USE WASHED STONE PLACED 2 INCHES BELOW THE TOP OF THE BLOCK ON A 2:1 SLOPE OR FLATTER AND SMOOTH IT TO AN EVEN GRADE.
- INSTALL 1/4 IN. WIRE MESH HARDWARE CLOTH, AND METAL POSTS THAT ARE 5 FT. TALL. PLACE THE WIRE MESH A MINIMUM OF 3 FT. HIGH, (2' IN GROUND, 3' ABOVE) AND THE STONE 16" HIGH. MAX POST SPACING = 4'.
- BEFORE COMMENCING CLEARING & GRUBBING OPERATIONS, THE CONTRACTOR SHALL FIELD LOCATE ALL EX. INLETS WITHIN THE OPERATIONS AREA AND INSTALL INLET PROTECTION.

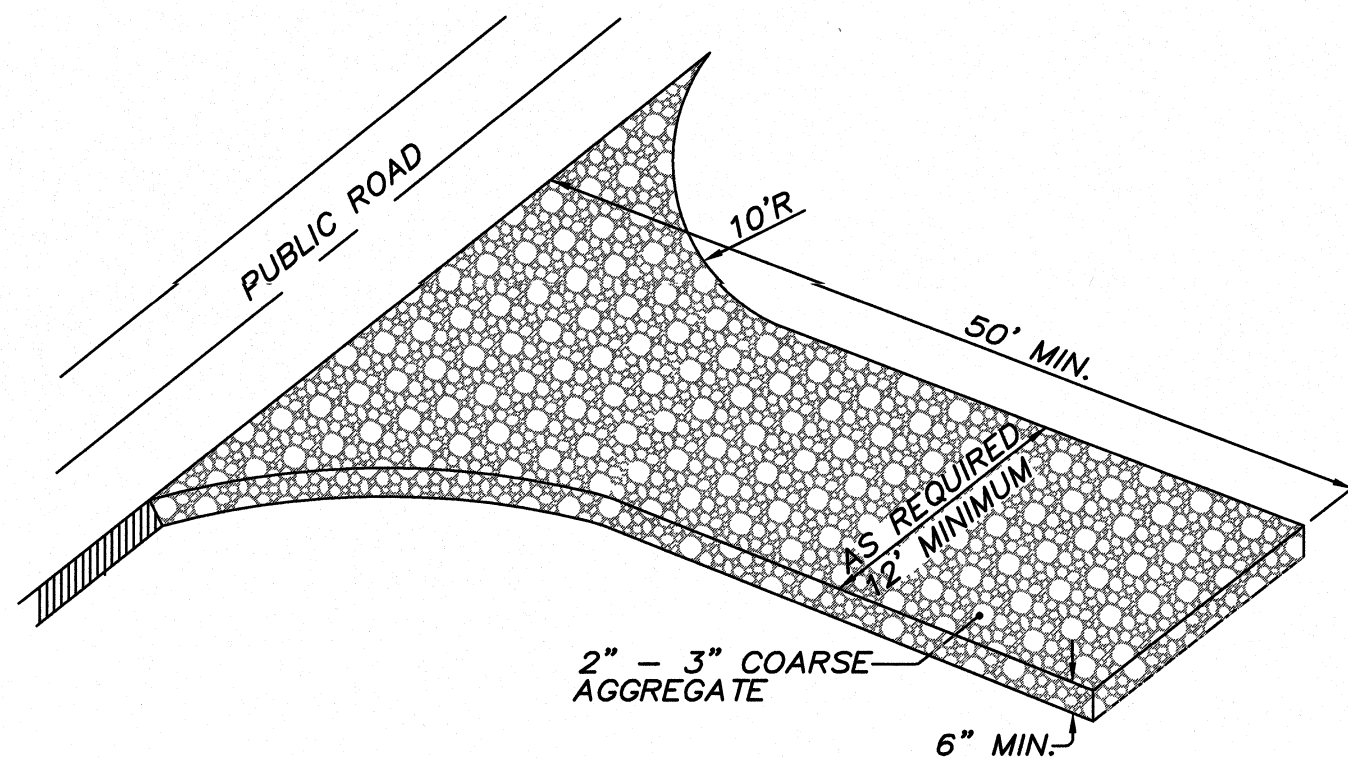
(REFERENCE: EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL, 6.51)

3

HARDWARE CLOTH AND GRAVEL INLET PROTECTION

D-11

SCALE: N.T.S.



GENERAL NOTES:

- INSTALL CONSTRUCTION ENTRANCE OVER EXISTING ASPHALT TAKING CARE TO AVOID DAMAGE AS EXISTING ASPHALT IS TO BE OVERLAYED PRIOR TO PROJECT COMPLETION.
- INSTALL A 1' LAYER OF SOIL OVER EXISTING ASPHALT.
- INSTALL A GEOTEXTILE LINER OVER NEWLY PLACED SOIL.
- PLACE THE GRAVEL OVER THE GEOTEXTILE LINER TO THE SPECIFIC GRADE AND DIMENSIONS SHOWN ON THE PLANS, AND SMOOTH IT.
- PROVIDE DRAINAGE TO CARRY WATER TO A SUITABLE OUTLET.
- MAINTAIN THE GRAVEL PAD IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE CONSTRUCTION SITE. THIS MAY REQUIRE PERIODIC TOPDRESSING W/2 INCH STONE.

5

CONSTRUCTION ENTRANCE

D-11

SCALE: N.T.S.

Approved Construction Plan

|          |      |
|----------|------|
| Name     | Date |
| Planning |      |
| Traffic  |      |
| Fire     |      |

CITY OF WILMINGTON NORTH CAROLINA

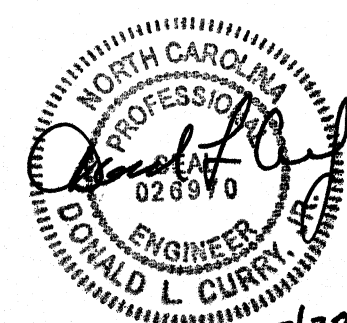
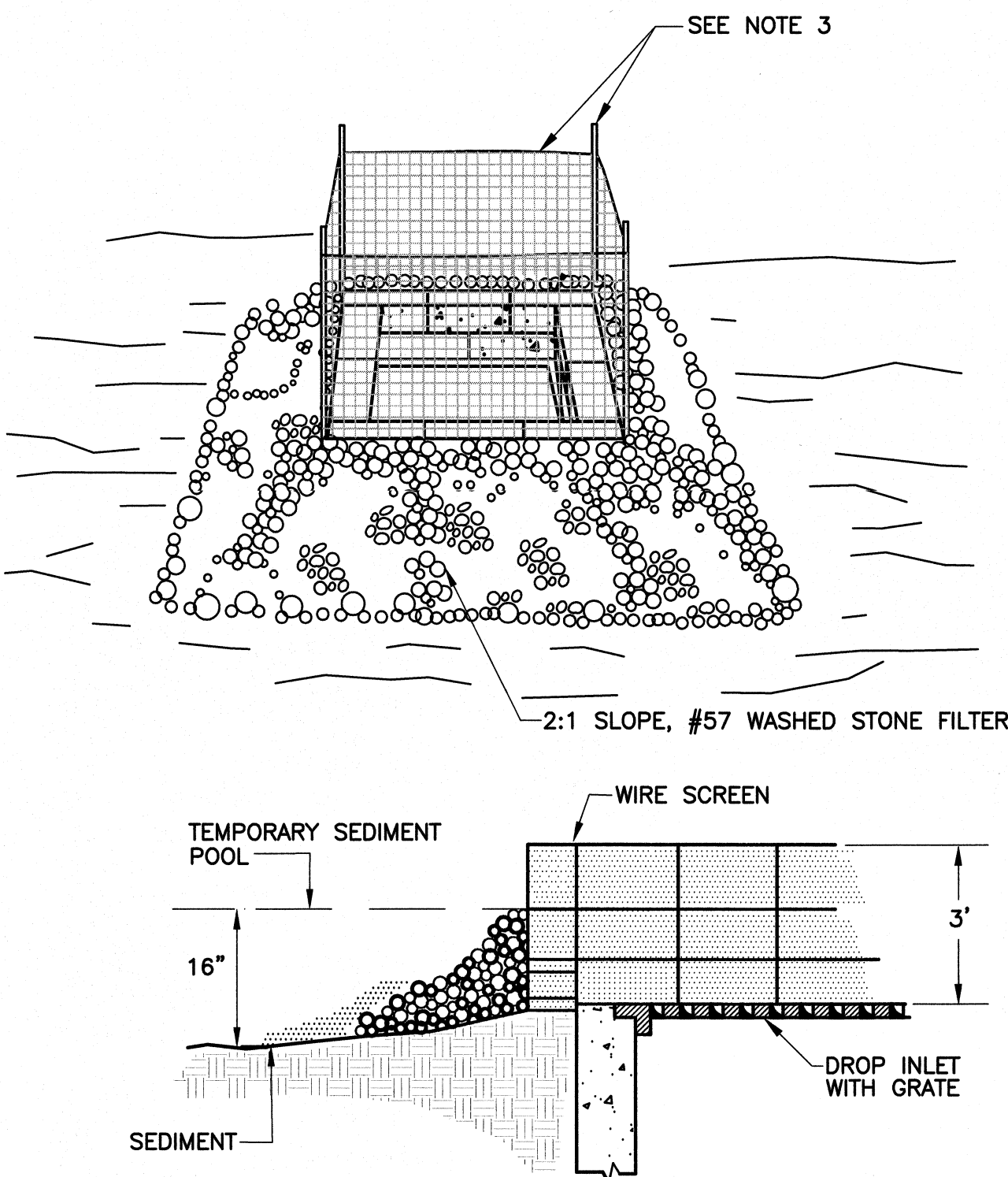
Public Services • Engineering Division

APPROVED DRAINAGE PLAN

Date: \_\_\_\_\_ Permit # \_\_\_\_\_

Signed: \_\_\_\_\_

| NPDES STABILIZATION TABLE                    |               |  |
|--|---------------|--|
| Site Area Description                        | Stabilization | Timeframe Exceptions   |
| Perimeter dikes, swales, ditches and slopes  | 7 days        | None   |
| High Quality Water (HQW) Zones               | 7 days        | None   |
| Slopes steeper than 3:1                      | 7 days        | If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed. |
| Slopes 3:1 or flatter                        | 14 days       | 7 days for slopes greater than 50' in length   |
| All other areas with slopes flatter than 4:1 | 14 days       | None, except for perimeters and HQW Zones  |



NOT FOR CONSTRUCTION

SHOPS AT COLLEGE RD. - WILMINGTON, NC

EROSION CONTROL DETAILS

PO BOX 2018  
100 BOX 2018 AVE  
RDUWAY VARIANA, NC  
27526  
PHONE: (919) 522-4849  
FAX: (919) 522-4857  
NC LIC. NO. P-0099

The Curry Engineering Group, PLLC

www.curryeng.com

D-11



| CURVE TABLE |          |          |        |        |         |                 |
|-------------|----------|----------|--------|--------|---------|-----------------|
| Curve #     | Radius   | Delta    | Length | Chord  | Tangent | Chord Direction |
| C1          | 2827.20' | 0°58'10" | 47.84' | 47.84' | 23.92'  | N33°42'23"E     |
| C2          | 230.00'  | 6°17'01" | 25.22' | 25.21' | 12.62'  | S69°33'17"E     |

| LINE TABLE |             |          |
|------------|-------------|----------|
| LINE       | DIRECTION   | DISTANCE |
| L7         | S56°47'12"E | 41.71'   |
| L8         | N33°12'48"E | 18.29'   |



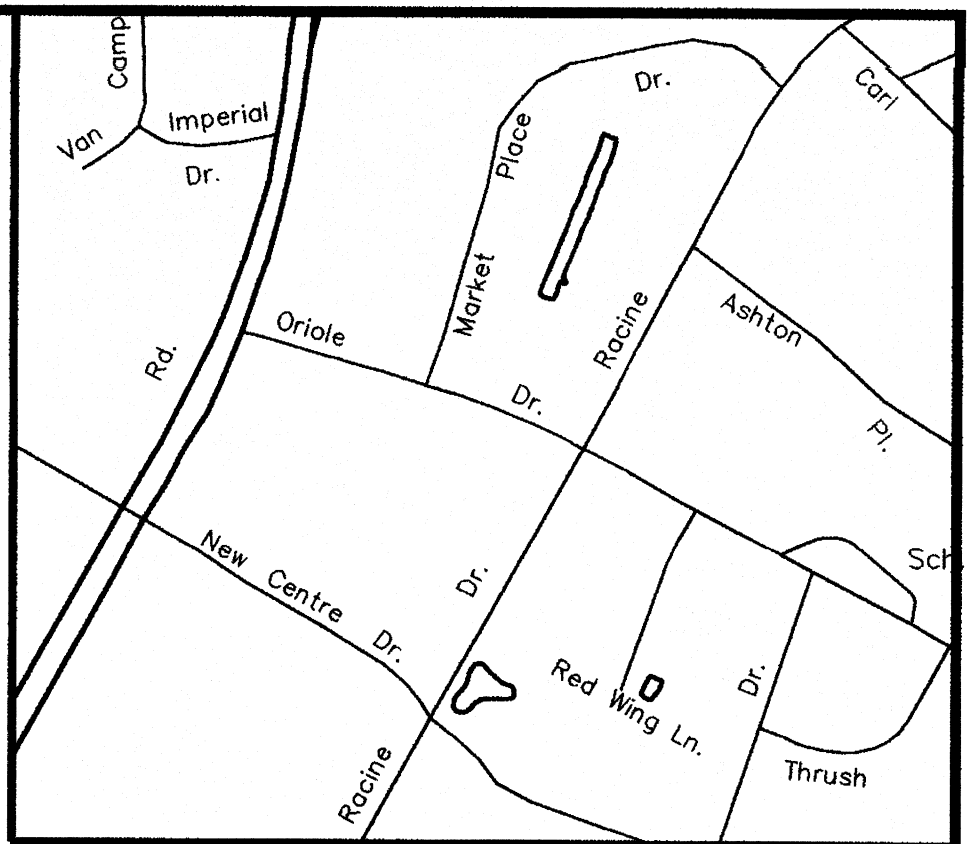
N.C. HIGHWAY 132/COLLEGE ROAD  
(200' PUBLIC R/W)

NOTE: BOUNDARY DISPLAYED IS  
SUBJECT TO A FUTURE MAP  
RECORDATION (BOUNDARY IS  
PRELIMINARY)

TF COLLEGE AND NEW CENTRE TRACT  
1.03 ACRES +/-  
PORTION OF TRACT 2  
MAP BOOK 40 PAGE 263

LOT 1  
TF COLLEGE AND  
NEW CENTRE TRACT  
MAP BOOK 40 PAGE 263

NOW OR FORMERLY  
ST. JOHNS LODGE NO. 1  
A.E. AND A.M.  
BOOK 1108 PAGE 549



VICINITY MAP  
NO SCALE

20' DRAINAGE EASEMENT  
(PRIVATE)  
MAP BOOK 40 PAGE 263

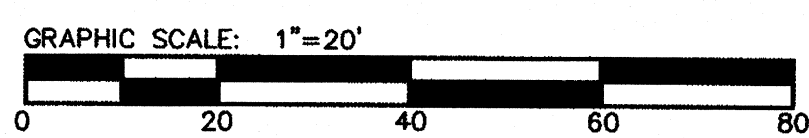
NOTE: BOUNDARY DISPLAYED IS  
SUBJECT TO A FUTURE MAP  
RECORDATION (BOUNDARY IS  
PRELIMINARY)

LOT 2  
TF COLLEGE AND  
NEW CENTRE TRACT  
MAP BOOK 40 PAGE 263

NOW OR FORMERLY  
CRUISERS CAR WASH  
MAP BOOK 25 PAGE 171

SURVEY REFERENCE  
MAP BOOK 40 PAGE 263  
BOOK 2506 PAGE 0240  
BOOK 2882 PAGE 1910

- LEGEND
- EIP EXISTING IRON PIPE
  - IPS IRON PIPE SET
  - WL WATERLINE
  - FO FIBER OPTIC
  - SS SANITARY SEWER
  - ohp OVERHEAD POWER
  - ug UNDERGROUND GAS



BOUNDARY, TOPOGRAPHIC AND TREE SURVEY  
TF COLLEGE AND NEW CENTRE TRACT  
1.03 ACRES +/-  
PORTION OF TRACT 2  
MAP BOOK 40 PAGE 263  
  
CITY OF WILMINGTON NEW HANOVER COUNTY  
NORTH CAROLINA

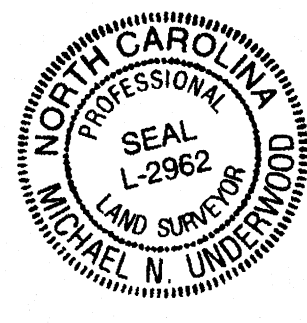
CLIENT: THE CURRY ENGINEERING GROUP, PLLC  
P.O. BOX 2018  
FUQUAY-VARINA, NC 27526

MICHAEL UNDERWOOD and ASSOCIATES, P.A.  
102 CINEMA DRIVE, SUITE A  
WILMINGTON, NC 28403  
PHONE: 910-815-0650  
FAX: 910-815-0393  
E-MAIL: muo@tizer.com Firm License # C-0615

|               |                |
|---------------|----------------|
| SURVEYED: CC  | APPROVED: MINU |
| DRAWN BY: TBM | DATE: DEC. 13  |
| CHECKED BY:   | SCALE: 1"=20'  |

UTILITY STATEMENT  
THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED  
FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS.  
THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND  
UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE  
AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR  
FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES  
SHOWN ARE IN THE EXACT LOCATION INDICATED ACCURATELY  
HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY  
AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR  
HAS NOT PHYSICALLY LOCATED UNDERGROUND UTILITIES.

CERTIFICATE:  
THIS SURVEY CREATES A SUBDIVISION OF LAND WITHIN AN  
AREA OF A COUNTY THAT HAS AN ORDINANCE THAT REGULATES  
PARCELS OF LAND (SEE NOTE).  
*Michael N. Underwood*  
MICHAEL N. UNDERWOOD, P.L.S. L-2962



NORTH CAROLINA  
NEW HANOVER COUNTY  
  
I, MICHAEL N. UNDERWOOD, CERTIFY THAT THIS PLAT WAS DRAWN  
UNDER MY SUPERVISION FROM AN ACTUAL SURVEY MADE UNDER  
MY SUPERVISION DESCRIPTION AS SHOWN ON THE FACE OF THIS  
PLAT RATIO OF PRECISION AS CALCULATED BY COMPUTER IS  
1/10,000 + THAT THE BOUNDARIES NOT SURVEYED ARE SHOWN  
BY BROKEN LINES PLOTTED FROM INFORMATION REFERENCED  
THAT THIS PLAT WAS PREPARED IN ACCORDANCE WITH "THE  
STANDARDS OF PRACTICE FOR LAND SURVEYING IN NORTH  
CAROLINA" WITNESS MY ORIGINAL SIGNATURE, LICENSE  
NUMBER AND SEAL THIS 17TH DAY OF DECEMBER  
A.D., 2013  
*Michael N. Underwood*  
MICHAEL N. UNDERWOOD, P.L.S.  
LICENSE NUMBER L-2962  
SEAL OR STAMP  
  
© 2013 MICHAEL UNDERWOOD and ASSOCIATES, P.A.